Training to Work in the Forest

A First Nation Forestry Program Conference and Workshop

Government of Canada
Natural Resources Canada
Indian and Northern Affairs Canada

Gouvernement du Canada
Ressources naturelles Canada
Affaires indiennes et du Nord Canada

Canada

The Canadian Forest Service's Northern Forestry Centre is responsible for fulfilling the federal role in forestry research and technology transfer in Alberta, Saskatchewan, Manitoba, the Northwest Territories, and Nunavut. The main objectives are research and development activities in support of improved forest management for the economic, social, and environmental benefit of all Canadians.

The Northern Forestry Centre is one of five centres of the Canadian Forest Service, which has its headquarters in Ottawa, Ontario.

Le Service canadien des forêts, Centre de foresterie du Nord, représente le gouvernememt fédéral en Alberta, en Saskatchewan, au Manitoba, dans les Territoires du Nord-Ouest et au Nunavut en ce qui a trait aux recherches forestières, et au transfert de technologie. Cet organisme s'intéresse surtout à la recherche et au développement en vue d'améliorer l'aménagement forestier afin que tous les Canadiens puissent en profiter aux points de vue économique, social et environnemental.

Le Centre de foresterie du Nord correspond à l'une des cinq centres du Service canadien des forêts, dont le bureau principal est à Ottawa (Ontario).

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Training to Work in the Forest

Proceedings of a conference and workshop held in Winnipeg, Manitoba, February 14–17, 2000

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Foreword

The focus of the First Nation Forestry Program (FNFP) is to build the capacity of First Nation communities to participate in forest sector economic opportunities. The program is funded by the Canadian Forest Service of Natural Resources Canada, and by Indian and Northern Affairs Canada. This joint funding arrangement is not unique among government programs. What is unique about the program, however, is the partnership with First Nations in managing the program through provincial and territorial management committees, and the inclusion of provincial and territorial government and forest industry representation on those management committees. In addition, program funds are only allocated to projects which demonstrate financial participation from other funding sources. This makes the FNFP a true partnership program.

The success of the program is largely due to its partnership approach. This success however can only be sustained if the partnership is responsive to the needs of First Nation communities. The management committees in the three Prairie Provinces and the Northwest Territories recognized the need to expose community members to a wide range of opportunities both in terms of approving projects which build capacity of First Nations and exposing individuals to information. To meet the latter need, the management committees have supported forestry conferences and workshops throughout the region. For example, the committees have supported such major events as "Aboriginal Business Partnerships in Forestry" (Saskatoon, February, 1997), "Aboriginal Entrepreneurship in Forestry" (Edmonton, January, 1998), and "Northern Forests Northern Challenges" (Hay River, NWT, 1998), in addition to local workshops focused on specific issues. The past conferences focused on forestry opportunities and how to access those opportunities or how others have accessed those opportunities. This year's conference "Training to Work in the Forest" was also intended to introduce delegates to a variety of opportunities in the forest sector but this conference focused on what is needed in terms of training to access those opportunities. The sessions were not intended to provide the required training to, for example, operate a portable sawmill, but to introduce delegates to the kind of training needed to participate in specific activities. The workshop sessions were designed to be hands-on – how to build a log home, or what to consider in a contracting business, or what are the activities of a log scaler or lumber grader. Our hope is that delegates would return to their communities motivated to discuss training needs with their communities and encourage their leaders to consider and have a better understanding of what community members need to become active and competitive participants in forest sector economic opportunities.

The success of the conference was evident from the high participation rate during all the sessions – in excess of 300 delegates attended in total. Delegates and speakers were from all regions of Canada and included some from the United States. What began as a regional effort in Saskatoon in 1997, has grown to a national event in the year 2000. This success would not be possible without the financial and technical support of numerous agencies. Pine Falls Paper Company and Manitoba Conservation provided financial and technical assistance, the FNFP management committees in Manitoba, Saskatchewan, Alberta and the Northwest Territories provided advice during the organization and development stages and made funds available for a number of First Nations people to attend the conference. Many speakers donated their time and shared their expertise in their presentation. The organizing committee graciously acknowledges the contributions made by these agencies and individuals.

I would like to recognize the special efforts put forward by the organizing committee which consisted of Christine Barker, Carol Mardell, Michael Newman, Eugene Burnstick and Lorne West, all members of the Canadian Forest Service, First Nation Forestry Program staff in Edmonton, Alberta or Prince Albert, Saskatchewan. The many late hours, which at times turned into early morning hours, have yielded a memorable and worthwhile event.

Joe De Franceschi
Conference Coordinator
Canadian Forest Service

Pre-conference Demonstration
Virtual Tools for Operation Planning and Harvester Operator Training

Virtual Tools for Effective Forest Operation Planning and Harvester Operator Training

Tim White
Timberjack Inc.

Virtually in the Forest

Cut-to-Length Harvesting (CTL) – Operator Training and More

As available trees become smaller, and economic, social, and environmental pressures force loggers into more intensive forest management practices including thinning and selective cutting, Timberjack's Harvester/Forwarder systems offer mechanical cut-to-length logging as a viable and proven alternative to traditional tree length and full tree logging.

Today's cut-to-length harvesting machines require operators with excellent hand-to-eye co-ordination, a good knowledge of forestry practices, and a basic understanding of computers. The Harvester operator plays a critical role in the logging operation, both in the long-range effects of timber harvesting and the logging operation's economic success or failure. It takes a lot of knowledge and practice to acquire the skills to develop the right touch for these machines.

Timberjack has developed a Harvester and Landscape Simulator that uses virtual reality in operator training. The system accurately simulates both the forest working environment and the machine functions. Through simulator training, operators can become familiar with the basic machine functions before they start working with a real machine. This avoids damage to both the forest and the machine caused by the operator's inexperience. They can also learn effective harvesting strategy such as cut-block layout, directional tree felling and product sorting, all while driving through the 'forest'.

The Simulator creates realistic working conditions in both a landscape and machine operating level. It creates three-dimensional virtual landscapes and can show the immediate and long-term visual effects of a timber harvest. The forest landscape can be viewed, at any time, from different perspectives and altitudes to see the 'view shed' created.

The Simulator is based on accurate machine modeling and an expandable visual system. The instructor can select terrain from a variety of forests and identify the strip road to travel on as well as select the trees to remove in a thinning training. The operator drives through the stand, harvesting the trees identified.

Each session is a time study, and reports and graphs can be generated to show the operator's strong and weak points. The Simulator records the time use of machine components, machine travel time, crane and head operation, and tree processing times. Production data is generated based on the number of trees harvested and the tree volumes, and a copy can be printed on the Simulator.

Operators sit in a seat identical to the one in a real machine and they use the actual joysticks to control boom and harvesting head operations and the throttle pedal and steering lever to drive the Harvester through the forest. The entire training environment is designed to mimic actual cut-to-length harvesting conditions through the use of real sound effects and visual animation.

The renewal of the forest environment is a slow process. The changes that result from timber harvesting are long lasting, and for this reason, the impact of logging operations should be carefully weighed and planned beforehand. The same applies to operator training, which should be as safe and effective as possible.

Two Timberjack Simulators have been designed in response to these needs:

- the **Forest Landscape Simulator** is an efficient tool for planning logging operations and creating virtual images of the impact of harvesting on the forest landscape – even over the long term.
- the **Harvester Simulator** is a state-of-the-art tool for operator training, from basic to advanced skill levels. Simulator training is safe, efficient, and cost-effective.

Landscape Simulator

The Landscape Simulator is a software package that automatically creates a three-dimensional virtual landscape by applying digital map information and forestry databases. The Simulator allows unrestricted movement and harvesting operations in the landscape, which can be viewed from different perspectives and altitudes.

Several tools are available for modifying the landscape. The user can accurately mark off the site to be harvested and freely define the type and extent of the operation. The forest is portrayed utilizing photo-quality trees, so the virtual landscape is extremely lifelike.

The Landscape Simulator is a tactical and operational planning tool that provides immediate visual response, allowing users to plan the best harvesting option. In this way, the impact on the landscape can be analyzed before the actual felling. If the user's GIS system includes growth models, the landscape can even be visualized over time to show the long-term impact of harvesting operations.

Applications of the Landscape Simulator

- create virtual visual landscapes of a desired area
- evaluate the landscape from various perspectives
- evaluate how alternative harvesting operations will affect the landscape
- visualize the change in the landscape according to specified parameters over a given period of time

Harvester Simulator

Today's cut-to-length (CTL) harvesters represent state-of-the-art technology and require many special skills from operators. In addition to excellent hand-eye coordination, the operators have to know forestry and computer technology. Their mechanical skills must also be excellent, and they must increasingly participate in the planning of harvesting operations.

Not surprisingly, it takes a lot of practice to acquire the necessary skills and develop the right 'touch' for the job.

In an industry first, Timberjack's new Harvester Simulator uses virtual reality in training. The system accurately simulates both the working environment and machine functions, providing an effective tool for operator training. Harvesting conditions and other parameters can be specified, and the simulator also produces reports to help identify the trainees' strong points and weaknesses.

The Harvester Simulator is based on the Landscape Simulator, so it offers almost unlimited possibilities for designing operating environments. The Harvester Simulator can also be used to design the strip road network and even tree marking. The actual operation is based on accurate machine modeling and a versatile easy-to-expand virtual system. A modular structure makes it possible to adapt the Simulator to new machine models.

Wide-ranging Advantages of Simulator Training

By using a simulator for training, realistic working conditions can be created. To keep the trainees' level of motivation high, the Simulator is equipped with actual machine controls, including a complete Timberjack 3000 measuring and control system. The machine functions and interaction with the environment have been modeled to be as real as possible. The control settings for various machine functions can be changed as desired, and visual feedback, sound effects, and animation also contribute to the effectiveness of virtual training.

Increased safety is another advantage. The Simulator helps avoid the damage that inexperienced operators can cause to both the forest and the machine. Through Simulator training, operators can become familiar with the basic machine functions before they start working with a real machine.

The Simulator also provides detailed reports on the training session through 'Simulog.' The total training time is automatically divided into segments specifying the use of different machine components and the time spent on machine travel, crane operation, and timber processing. Production volumes can be monitored in real time, as well as the amount of waste due to high stumps or small tree diameters. In addition to numerical statistics, the Harvester Simulator also makes it possible to 'fly' over the harvested site for an aerial view of the operations.

To ensure continuity in Simulator training, the collected data can be saved and restarted later. This also encourages self-learning, even at the beginning of the learning curve.

Feedback is another important advantage. The Simulator provides detailed information about the time used for different functions, as well as enabling objective comparisons between the trainees. Results can be measured in terms of costs and quality, and the same situation can be repeated at different machine settings.

Landscape Simulator Components

Required databases and libraries
- tree height model
- waterways, roads, and buildings
- forest resource information
- object library (trees, subvegetation, buildings and other fixed objects)

Adjustable parameters
- observation point (location, height)
- time of year
- direction of view
- time of day
- angle of view
- weather conditions

The Landscape Simulator is based on a VLG (Virtual Landscape Generator) developed by Instrumentationti Oy.

Harvester Simulator Components

Real machine controls and other equipment
- Harvester operator seat
- joy stick controls and keypads
- complete Timberjack 3000 measuring and control system
- can be installed in an actual Harvester cab

Special training tools
- landscape generator (terrain, underbrush, stand characteristics)
- design tools to mark the preferred strip road network
- tree marking capability to simulate thinning prescriptions

Low investment and running costs
- based on personal computer technology
- low maintenance costs
- low operating costs

No garages or transport equipment is needed because the virtual terrain is created at the training facility.

The visual system was developed by Instrumentationti Oy.

The Landscape and Harvester Simulators were designed by Plustech Oy, a Timberjack affiliate company specializing in advanced long-range product development. Plustech Oy is part of Timberjack's European R and D Centre in Tampere, Finland.

Pre-Conference Workshops

Capacity Building Programs for Aboriginal People

Sustainable Communities Initiative (SCI)

Jean-Claude Henein, Natural Resources Canada, Earth Science Sector

Objective – SCI

- build the capacity of Canada's Aboriginal, rural, and northern communities who wish to use
    - computer-based information
    - the Internet
- to improve their ability to plan and make decisions.

Background

- "use developments in database and telecommunications technology to help meet the needs of remote communities"
- a partnership of:
    - federal government departments active in the field of community development
        - Natural Resources, Industry, Environment, Agriculture and Agri-Food, Indian and Northern Affairs, Health, Statistics, Human Resources Development.
        - provincial/territorial and local governments informed and welcome to join.

Principles of operation

- partnerships
- mentoring
- control by the communities

Specific elements of the program

1. understanding the community's requirements
2. pilot project for a major requirement of the community
3. computer systems upgrade, if required (geospatial, Internet, decision-support work)
4. access to data
   (identify sources of data and method of acquisition)
5. training of members of the community (in the context of the project)
6. advice regarding partnerships and opportunities
7. the dissemination of knowledge gained
   (within the community; to other communities)
8. SCI Portal: www.sustainablecommunities.gc.ca

Community Profile

- strong community leadership support: vision and commitment
- prepared to provide and fund day-to-day project manager
- facing important planning or decision-making issues
- prepared to put in place community-oriented planning and decision support tools, including web-based and GIS tools (staff, equipment, training)
- willing to consider the establishment of an Internet Community Access Program (CAP) site
- representative of a significant group of communities
- willing to share experience with other communities

Pilot communities

Active

1. Na-Cho N'Yak Dun, Yukon
2. Walpole Island, Ont.
3. Montreal Lake, Sask.
4. Wagmatcook, N.S.
5. Manawan-Wemotaci, Qué.
6. Kugluktuk, Nunavut
7. Wahnapitae, Ont.
8. Okotoks, Alta. (Urban)
9. Liidlii Kue, N.W.T.

10. Sydney, N.S. (Urban)
11. Gitxsan, B.C.
12. Eel Ground, N.B.

Regional
13. Dawson/Carmacks/Selkirk, Yukon
14. Beaver County, Alta. (Agr.)

Partnerships
15. Teslin, Yukon

Planning underway
Oujé-Bougoumou, Qué

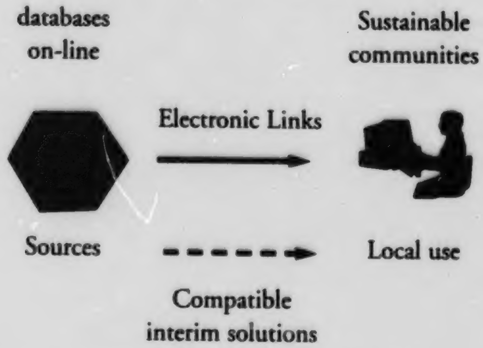
GeoConnections

- promotes internet access to geomatics data
- federal, provincial/territorial, local sources
- other groups

Consists of several programs, e.g.

- GeoInnovations
- National Atlas
- Sustainable Communities

GeoConnections: Central Databases and Sustainable Communities



DBs: government, industry, local databases on-line
Links: geospatial data on the Internet (standards, policies)
SC: local needs, capability to process and use information

Access to the program

- regional expansion proposal
  from "alumni" community and its neighbours
- sponsored proposal
  from community and sponsor
- new Aboriginal communities:
  proposal with
    - Assembly of First Nations and its Regional Councils
    - Inuit Tapirisat of Canada and its Regional Councils
    - Métis Association of Canada
- new rural communities:
  proposal with:
    - Federation of Canadian Municipalities

SCI – Financial Procedure

Expression of interest

Contents:

- Indicate:
  New community; regional, or sponsored
- General interest of community: <Plan or vision>
- Elements of SCI contribution that would help
- Timetable for proposal and budget

Proposal

Contents:

Demonstrate:

1. Leadership support
2. Project Manager available, including back-up plan
3. Major planning issue for Pilot project
4. Willing to adopt Web/GIS: Trainee deployment plan
5. Consideration of CAP site
6. Community representative
7. Willing to share experience

Appendix 1: Pilot project
Appendix 2: Budget

If regional or sponsored:
Appendix 3: Mentoring proposal
Min: 1day/week; back-up plan

Budget

Eligible:

- Equipment
- Software
- Data
- Training
- Expertise

Contribution Agreement

Payments:

After signature	Cheque #1 - $15,000
6 mos. report	Cheque #2 - $10,000
1 yr. report	Cheque #3 - $5,000
Final report	Publication contract - $ 1,000

Rough number of communities (yearly for 4 years)

Regional expansion	5
Sponsor program	5
New communities	
Aboriginal	5
Rural	5
Total	20

Professional Growth Program in Land and Resources Management for First Nations: A Proposal

Professional growth opportunities for First Nations

1. The First Nations Excellence in Land and Resources management
   - Traditional understanding of the Land
   - Acceptance of GIS and Info. Technology
2. A large demand for talent
   - FN Governance

Case study

"R." is a young member of the Na-Cho N'Yak Dun (NND) First Nation in Mayo, Yukon.

Basic GIS training for 6 NND members is available

NND advertises the training opportunities to its members.

R. is interested, takes the course, and is quickly recognized as a gifted student in the field.

Things could stop there.

Rather, we wish to help R. chart her future towards a professional Land Use Manager career, helping Yukon First Nations manage their traditional territories.

At this juncture R. needs three key pieces of information:

- is there a qualified learning institution close to home?
- where can I find funding support for my studies?
- if I am qualified, what are my chances of being accepted?

Proposal

SCI would like to work with all like-minded organizations to provide "regional" answers to the following questions:

- is there a qualified learning institution close to home?
- where can I find funding support for my studies?
- if I am qualified, what are my chances of being accepted?
  (number of scholarships identified for Land and Resources management)

Professional Growth Program for First Nations

Suggested Characteristics

- based on existing programs
- adequate financially
- stable over course of study
- adapted to FN Youth
  - Close to home (local or regional)
  - Ability to pause to refresh link with community

Part of *Career Path* based on

- K-12 introduction
- network of appropriate regional educational institutions
- earmarked funding: "N" scholarships/year

Design and Implementation of Professional Growth Program

Collaboration among sponsoring organizations is essential

- Aboriginal associations
- lead federal departments: HRDC, INAC
- territorial/provincial/local governments
- SCI partners

SCI prepared to provide interim secretariat for Working Group on First Nations Professional Growth Program for Land and Resources Management

The Challenge and the Reward

Being able to assist "R." of Mayo and other youth like her across Canada

First Nations Economic Development and the Federal Government

Creating Partnerships

Anna Fontaine, Indian and Northern Affairs Canada

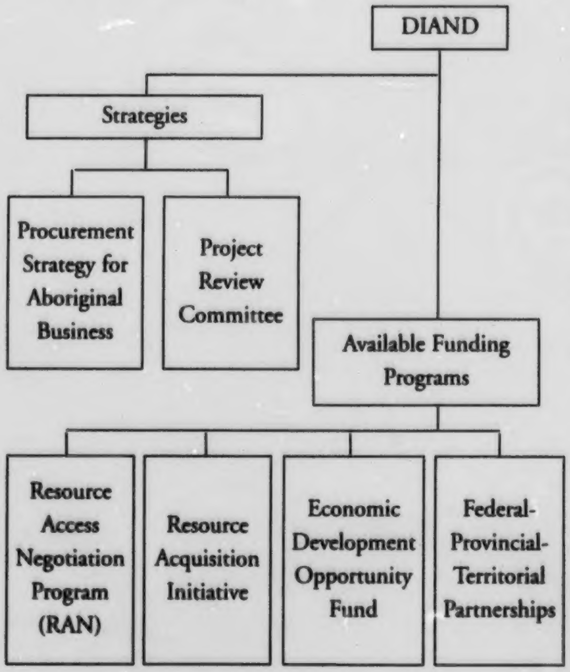
Achieving Positive Economic Growth

"Supporting healthy, sustainable Aboriginal communities means finding new ways to empower individuals and their communities."

Gathering Strength

To attain this goal, the federal government is committed to creating many avenues to achieve positive growth in First Nation economic development.

Federal Economic Development Strategies and Funds


DIAND
Strategies
Procurement Strategy for Aboriginal Business
Project Review Committee
Available Funding Programs
Resource Access Negotiation Program (RAN)
Resource Acquisition Initiative
Economic Development Opportunity Fund
Federal-Provincial-Territorial Partnerships

Resource Access Negotiations (RAN) Program

The objective of the program is to assist First Nations to access business and employment opportunities from major projects; attract investment in reserve natural resources; access off-reserve natural resources; and participate in the management of off-reserve natural resources.

Eligible Project Purposes

- negotiating activities
- investment negotiating activities
- resource access negotiating activities

Resource Acquisition Initiative Program

This program assists First Nations with equity financing to acquire permits, licences, and stakes etc., required to establish business entities and/or develop ancillary business opportunities arising from resource development.

Eligibility

First Nations that have:

- a business plan demonstrating a need, an opportunity, and commercial viability in the resource sector
- already negotiated access to the resource through the RAN program, where appropriate
- organizational development capacity
- a proven track record, and
- a record of regular and acceptable reporting.

Economic Development Opportunity Fund Program

This program provides equity gap funding so eligible recipients can attract joint venture partners or secure conventional debt financing to take advantage of a business opportunity.

Eligible Recipients:

First Nations that:
- have submitted an acceptable business plan
- can demonstrate a need/opportunity
- have the organizational development capacity with a proven record in business development, and
- have a record of regular and acceptable reporting are eligible to access this fund.

Federal-Provincial-Territorial Partnerships Program

This program provides financial assistance to First Nations to assist their participation in the planning and execution of large-scale regional natural resource-based developments.

Eligible Recipients:
- First Nation governments and/or community controlled economic enterprises
- project initiatives must relate to large scale regional resource sector "major projects" developments
- funding dependent on the development of a "Partnership Agreement" involving the private sector and federal, provincial/territorial, and First Nation governments.

Project Review Committee

AMC Executive committee have approved a motion to create a First Nation decision-making authority mechanism for all economic development related programs being delivered by INAC in the Manitoba Region.

Objectives:
- To review First Nation applications to INAC economic development programs and approve level of financial support.
- To provide policy advice on process, procedures, and the management regime for INAC economic development programs.

The Procurement Strategy for Aboriginal Business

Promotes accessibility to federal contracts for goods and services to Aboriginal businesses and suppliers.
- Information and promotion activities
- Set-Aside Opportunities
- Encouragement of Joint Ventures and Sub-contracting
- Opportunities at other levels of government : provincial, regional, municipal, international.

Procurement Set-Asides and Eligibility

Set Asides:

Mandatory: contracts servicing majority Aboriginal population

Voluntary : any procurement where procurement authority thinks it is appropriate

Who is eligible?
- Aboriginal business (51% Aboriginal-owned and controlled)
- joint ventures
- one-third Aboriginal employees if 6 or more full-time staff

Appendix 1
Economic Development Opportunity Fund
Program Guidelines

Program objectives

The objective of this program is to provide "equity gap" funding to eligible recipients in order that they or one of their constituents can attract joint venture partners or secure conventional debt financing to take advantage of a business opportunity.

Eligible recipients

First Nation, Inuit, and Innu community economic development organizations that:

- have submitted an acceptable business plan
- can demonstrate a need/opportunity
- have the organizational development capacity with a proven record in business development, and
- have a record of regular and acceptable reporting are eligible to access this fund.

Eligible projects

Activities that lead up to and include the establishment or expansion of a business opportunity which will result in the creation of jobs, enhanced community wealth and the reduction of social dependency.

Eligible funding limits

Any contribution approved under this program will not exceed the recipient's equity contribution.

Ineligible costs

No contribution from this program will be made toward costs already contributed to by the Government of Canada. No contribution from this program will be made toward feasibility studies and/or business plan costs.

Appendix 2
Resource Acquisition Initiative
Program Guidelines

Program objectives

To assist First Nations with equity financing to acquire permits, licences, and stakes etc. required to establish business entities and/or develop ancillary business opportunities arising from regional resource development. The objective of this program is to provide "equity gap" funding to eligible recipients in order that they or one of their constituents can attract joint venture partners or secure conventional debt financing to take advantage of a business opportunities in the resource sector.

Eligible recipients

First Nation, Inuit, and Innu community economic development organizations that:

- have submitted an acceptable business plan,
- can demonstrate a need/opportunity,
- have the organizational development capacity with a proven record in business development, and
- have a record of regular and acceptable reporting are eligible to access this fund.

Eligible projects

Activities that lead up to and include the establishment or expansion of a business opportunity which will result in the creation of jobs, enhanced community wealth, and the reduction of social dependency.

Eligible funding limits

Any contribution approved under this program will not exceed the recipient's equity contribution.

Ineligible costs

No contribution from this program will be made toward costs already contributed to by the Government of Canada. No contribution from this program will be made toward feasibility studies and/or business plan costs.

Appendix 3
A Business Plan

A business plan must provide a detailed outline of the history, management, operations, marketing, and financial aspects of the business. It should demonstrate why the applicant requires a federal economic development contribution and how this contribution will enhance the business and make it a viable, ongoing business venture.

The business plan will be the basis for preparing the project approval documents.

The business plan must contain the following information against which it will be assessed:

- applicant
- history/background
- business sector and location
- business description, structure and personnel
    - business structure, and ownership
    - organization and key personnel
    - labour force
    - training requirements
    - job creation (maintained, created, and impact on social assistance)
- Project costs: source and application of funds
- Facilities and equipment
- Strengths and weaknesses for:
    - management
    - markets/marketing plan
    - competition
    - production (if applicable)
    - profitability--income statements
    - historical and pro forma financial statements
    - working capital
    - administration, financial records and systems
- Loan security (if applicable)
- Other significant information (e.g., environmental factors)
- Related business activities
- Impact on community (e.g., revenue generation, long-term jobs, role model, provision of services, and effects on regional economy)

Appendix 4
Resource Access Negotiations (RAN) Program
Program Guidelines

Program objective

The objective of the program is to assist First Nations, Inuit, and Innu communities to:

- access business and employment opportunities from major projects;
- attract investment in reserve natural resources;
- access off-reserve natural resources; and
- participate in the management of off-reserve natural resources,

consistent with community needs and the principles of sustainable development and in an environmentally sound manner.

Eligible applicants

First Nations, Inuit, and Innu communities and settlements, tribal councils, and their institutions, which have been mandated by their bands or communities to carry out activities on their behalf, and which have a record of regular and acceptable reporting.

Eligible project purposes:

- **negotiating activities** with developers of off-reserve resource projects near reserves or communities, and related parties to gain employment, business, and other economic benefits from these projects
- **investment negotiating activities** for the sale, lease, or development of community-controlled natural resources which have not been subject to development in the past
- **resource access negotiating activities**, with provinces, territories and other owners or users, to access, or participate in the management of, off-reserve natural resources
- **pre-negotiation studies to define the area to be co-managed, to review existing information and inventories of natural resources and to develop preliminary plans for the area are defined as eligible project purposes** with regard to negotiations for the co-management of off-reserve resources

Negotiating activities do not include

- pre-negotiating activities such as community planning and consultations to identify resource access issues and to determine whether or not to enter negotiations, except in negotiations to participate in the management of off-reserve natural resources
- negotiations which do not represent "first time" activities, e.g., renewals or renegotiation of expired or expiring on-reserve leases
- activities related to the federal jurisdiction over reserves, which are normally assumed by the Department of Indian Affairs and Northern Development (INAC)
- community ratification processes and on-going costs of development agreements, e.g., implementation costs
- market research, development of business plans, and capitalization of projects resulting from development agreements
- the development of joint venture proposals with the private sector for the development of both on and off-reserve natural resources.

Proposal assessment criteria

Proposals are assessed according to the following criteria:

- compliance of the project with the "Program Objective" and "Eligible Project Purposes" of the RAN Program
- in the case of off-reserve projects, the probability of the project proceeding and the evidence of viable community-based business and employment opportunities that could arise from the negotiations;
- there is a basis for successful negotiations, e.g., one or more parties are willing to negotiate with the applicant
- whether the work plan can be carried out for the proposed cost and within the proposed time frame

- the extent of the applicant's financial and human resources commitment to the overall objectives, and the need for financial assistance requested, taking into account the applicant's financial capacity and availability of funds from other sources
- the potential availability of funds to implement the agreement, and resulting business and employment opportunities.

Eligible costs

Eligible costs funded through the RAN Program include:

- fees and expenses of technical experts, including consultants, negotiators and lawyers, hired for these purposes
- incremental direct costs to the First Nations or communities related to the negotiating activities.

Ineligible costs

Ineligible costs not funded through the RAN Program include:

- per diems, salaries and wages for community members for whom the work related to the project falls within a work assignment for which they are already paid
- overhead costs to the applicant, in situations where the applicant would normally incur the overhead costs in the absence of the project
- honoraria for band or community members
- requests for increased funding for an approved project
- expenses for services normally provided by INAC
- costs related to non-economic activities (e.g., environmental assessment).

Level of Funding

To optimize the national impact of program funds available under the RAN Program, applicants are expected to commit financial and human resources to the overall purpose of the negotiations to the maximum extent of their capacity.

The RAN Program will fund projects according to the following formula:

Total eligible project costs
Less:
•project funding from third parties

- the proportionate share of the benefits, if the project has a component which is non-Indian, non-Inuit, or non-Innu
- the applicant's equity

Applications

Applications should be made to INAC Regional Offices.

Applications should include the following information:

- project title name, applicant's name, address, telephone and fax numbers (if available), application date
- description of proposed resource development project
- applicable sector (e.g. forestry, resource co-management, fisheries, tourism)
- the purpose of the project
- name and address of the other negotiating party(s),
- project work plan, including a description of negotiating activities and approximate time-frames
- project expenses, including a list of costs according to work plan activities and fiscal year
- project benefits, including anticipated results (e.g. employment, business and investment opportunities, type of agreements), and the time-frame in which they will occur
- project budget, including all funding sources, the applicant's equity and fiscal year for which commitments apply
- project cash flow, based on planned expenditures and commitments of funding from other sources,
- an explanation as to how the project fits into the applicant's community/organization plan and why the applicant believes the negotiations will succeed,
- the applicant's initiatives to secure project funding from other sources
- how the applicant will manage the work.

First Nation Reporting

It is a condition of every initiative funded under the RAN Program that the applicant agrees to report on activities carried out and benefits generated. This is to be summarized as follows:

Resource Access Negotiations Program
Project Summary Report
Instructions

Due Date: This project summary report is required to be submitted to regional office on or before June 30th outlining the previous fiscal year RAN activity/results.

- Fill in name of region
- Fill in name of project
- Describe project sector (e.g., resource co-management, forestry, tourism)
- File in name of project sponsor (recipient)
- Outline total project cost, RAN contribution and other project funding
- Provide a short description of project objectives
- Describe project results (e.g. co-management agreements negotiated, jobs accessed, training provided in order to access jobs, new business opportunities, etc.)

Aboriginal Business Canada

Promoting the Growth of Canada's Aboriginal Businesses

Lloyd Bisson, Industry Canada, Aboriginal Business Canada

Our vision — and the results we seek

- a competitive, sustainable Aboriginal economy actively linked with the economies of Canada and the world
- an economy based on traditional Aboriginal values, led and managed by Aboriginal entrepreneurs and managers
- nationally and internationally recognized Aboriginal corporations leading in traditional and new economy industries
- successful Aboriginal entrepreneurs who can serve as role models to encourage and inspire new generations

Key Business Services

Focusing on Strategic Business Investments

Financial assistance available to eligible entrepreneurs as either repayable or non-repayable contributions towards the costs of:

- developing business plans and undertaking feasibility studies establishing new businesses or joint ventures
- establishing new businesses or joint ventures
- business support, such as management and technical training, or hiring accounting or other professional advisors after starting a business; and/or
- advocacy activities which can benefit more than one firm and improve the overall business climate.

Entrepreneurship Development

We provide information products, and advocacy for Aboriginal business including:

- networking, matchmaking and capacity-building business planning support and diagnostics
- entrepreneurship training products; and
- links to Aboriginal business development reference material from our web-site

Example:
Assistance was provided to the Saik'uz First Nation (owners of Tin Toh Forest Products) to send an economic development officer to attend a building products exporters' course in Vancouver in October of 1999.

Strategic Priorities for Growth

Expanding Markets and Trade Opportunities

- many Aboriginal firms are already experienced at trading outside of their local markets
- we are helping to increase the number of Aboriginal exporters
- we assist companies to expand their sales into regional and broader domestic markets
- matching clients with expertise in Industry Canada's International Trade Centres, in the Department of Foreign Affairs and International Trade, and other agencies
- registering clients in federal export promotion databases
- providing information products and referrals to other resources such as the new "Aboriginal Trade Directory"

- financial assistance available for trade development activities
- working to build capacity in:
  - cultural products
  - Indigenous-to-Indigenous trade
  - overall trade development

Example:
Manitou Forest Products Limited, owned by the Rainy River First Nation received assistance in addition to arranging private financing, to expand a joint venture partnership with Rebco Wood Products. The expansion resulted in an immediate increase in revenue from additional products sold to markets across Canada and the United States

Aboriginal Tourism

Providing support

- to establish new businesses that offer Aboriginal cultural tourism or ecotourism experiences
- to add an Aboriginal cultural tourism or ecotourism component to an existing tourism business
- to build capacity in the tourism sector

Youth Entrepreneurship

Developing the Potential of Aboriginal Youth – The Next Generation of Entrepreneurs

- inspiring youth by showcasing Aboriginal business people as role models
- developing educational materials and initiating pilot projects to facilitate young people getting into business
- developing specialized initiatives to support youth entrepreneurs in starting and growing their business, e.g., Aboriginal Youth Business Initiative—providing loans, funds, and services through Aboriginal financial organizations
- contributing to thousands of business ventures owned and operated by young people (18 – 29 years of age)

Strengthening the Infrastructure

Strengthening Aboriginal Financial and Business Development Organizations

- 32 Aboriginal Capital Corporations (ACCs) in Canada that offer lending and financial business services to Aboriginal businesses
- typically ACCs have about $5 million in revolving-loan capital, and offer secured term loans
- working with the ACCs to increase their long-term viability in the marketplace

Innovation

Encouraging innovation and the widespread use of technology

- by stimulating awareness of how technology can produce business success
- by developing Aboriginal managers adept at leading innovation-based business
- by improving entry to the international marketplace
- by creating information products and access to them through "Information Highway" initiatives
- by providing financial support to Aboriginal firms in certain technology sectors, such as software development and environmental industries — e.g., "Knowledge Economy Firms"

Example:
Wapawekka Lumber, a joint venture of the Woodland Cree First Nations specializes in processing logs that would otherwise be ground into pulp. With the assistance of Aboriginal Business Canada, Wapawekka has purchased a small log curve saw, a technologically advanced piece of equipment which increases the yield of market-quality lumber.

Conclusions

The Aboriginal business community is characterized by innovation, entrepreneurship and success. It is dedicated to maintaining the values and enhancing the proud heritage of Aboriginal peoples in Canada. As we enter the 21st Century, Aboriginal Business Canada is confident and excited about the prospects for continued growth and success.

Canadian Executive Service Organization (CESO)

Helen Agger and Jerry Colborne, Canadian Executive Service Organization

Objective

To tell you about
- CESO's structure
- What is CESO
- Type of work CESO Aboriginal Services does
- Our clients
- Our Volunteer Advisers

Reason for this presentation

- to let you know that CESO has an important role to play in the programs being offered to Aboriginal people
- we are interested in the partnership concept

Content

Structure of CESO

Canadian Executive Service Organization has two major divisions
- International Services
  - emerging economies around the world (China, Thailand, South and Central America, Eastern Europe, etc.)
  - by working through CIDA, a federal agency
- CESO Aboriginal Services
  - six national regions

What is CESO

- **not-for-profit** organization
- we are governed by a national Board of Directors
- funded by
  - federal government (DIAND, HRDC, and CIDA),
  - private corporations (over 300),
  - donations from private individuals
- have been in existence for 31 years

CESO Aboriginal Services clients

Aboriginal
- businesses
- communities and community organizations
- tribal councils
- individuals
- etc.

(**Aboriginal** = Metis, Inuit, First Nations, Status, Non-status, Treaty)

Type of assistance: to advise and mentor

- marketing and management and other economy related areas
- training workshops in a wide selection of areas
- community development and other other social based areas

FOCUS:
i) skills transfer and
ii) capacity building

CESO's Voluntary Advisers (VAs)

- retired professionals in finance, education, communication, management, law, etc.
- CESO Aboriginal Services is currently seeking Aboriginal Volunteer Advisers – Aboriginal professionals are in **high demand**
- Specific to the First Nation Forestry Program, there are CESO Volunteer Advisers with expertise in:
  GIS; woodlot planning and management; hardwood management; forest fire management; parks and wilderness planning, development, administration, operations and management; raw material quality control for the paper mill industry; agroforestry; logging operations; forest science and research programs; forestry policy

and program planning; lumber for building supplies and sales; forest harvesting; housing; cabinet making; sawmill operations; and eco-tourism.

Based on our roster, we can provide one or a team of VAs to advise and assist those who are looking to apply for funding, access programs, establish a business or expand an existing one within the forestry based economy.

Conclusion

Hopefully I have helped you visualize how and where CESO can help Aboriginal people become their own managers, control the economic activities taking place in their communities or open new areas of activity, in order to be the ones sitting in the driver's seat in developing a forestry-based economy.

There are copies of Capability Profiles for further details about our organization.

Please feel free to call us or drop by our office at 191 Lombard Avenue in Winnipeg.

Cost structure:

- for VA expenses:
    - travel (airfare; mileage, such as Winnipeg to Leaf Rapids or driving from Winnipeg to Thompson)
    - accommodations and meals
    - a daily incidentals fee
    - a miscellaneous fee
- an administration fee for each assignment

MANDATED to provide an affordable service at a minimal cost to the client

Capacity Building Programs for Aboriginal People

Reid McClelland, Senior Manager
Aboriginal Banking, Royal Bank
Manitoba and N.W. Ontario

- Building capacity to develop personal and business financial proficiency
- Capacity building – gained by joint ventures with partners in construction, forestry, etc.

Royal Bank Team

Bruce Campbell, Regional Vice President, Manitoba and N.W. Ontario
Archie Arnott, Vice President, Business Banking, Winnipeg
Reid McClelland, Senior Manager, Aboriginal Lending Services, Manitoba and N.W. Ontario
Linda Park, Manager, Aboriginal Banking, Planning and Development, Manitoba and N.W. Ontario
Wayne Negrey, Assistant Manager, Aboriginal Lending Services, Manitoba and N.W. Ontario

Key Strategic Initiatives

- banking services
  - lending
  - deposit and investment services
  - cash management
- human resources
  - employment
  - post-secondary internship
  - Aboriginal Business Education Program
- youth initiatives
  - Aboriginal Stay-in-School Program
  - Junior Achievement Initiatives
- teamwork
  - business banking, personal financial services, human resources, risk management
  - Royal Trust First Nations Advisory Services

Banking Services to Encourage Capacity Building

- lending services
- deposit and investment services
- cash management services
- housing mortgages

Lending Services

- operating loans (line of credit)
- housing projects
- term financing
  - to support Economic Development initiatives to individuals and companies .e.g., Community store, etc.
- bridge financing
  - INAC capital projects e.g., schools, infrastructures, medical facilities, recreation and administration buildings.

Investment Services

- deposit accounts
  - savings
  - interest compensation on floating balances
- investments
  - term deposits
  - GIC's
  - mutual funds

Non-Lending Services

- letters of credit/guarantees
- cash management services
  - Tran$act
  - Cash Command
    - balance and transaction
    - electronic funds transfer wires
- payroll (automated)
- electronic payment deposit services

Financing For Housing Construction

- housing (CMHC)
- multi-unit housing (RBC)
- single-unit housing (CMHC, loans)
- single-unit housing (RBC, Housing Program)

School Project

Team

- band-owned contractor
- project management-contractor
- engineer/architect
- project management company
- representatives from community

Capacity Building

- employment – 70-80% from community members
- training opportunities – skill development in construction trades
- company – provides apprenticeship training program

Overview Forestry Project – Joint Venture

- First Nation community has timber rights to valuable cutting area and available labour force
- local forestry contractor wants to work with First Nation
  - has available equipment for road building and forestry
  - past experience
- local mill will sign long-term contract for logs delivered
- bank willing to finance joint venture
- tremendous opportunity for both First Nation and contractor – *win–win*

Capacity Building Benefits: Win-Win

First Nations

- employment and training opportunities
- gaining expertise – contractor using specialized forestry equipment
- gain knowledge in forestry management
  - financial
  - negotiation skills
- opportunity – profit

Contractor

- available workforce
- access to forestry resources
- using expertise – training
- opportunity – profit

Natural Resources Management Technology - Forestry Courses at Keewatin Community College

Will Trowell, Keewatin Community College

Learning Outcomes: Forestry Practices

The student will be able to:

1. Utilise silvics knowledge in prescribing forestry operations
2. Calculate the scaled volume of a pile of logs
3. Describe and apply basic forest mensurational field methodologies
4. Recognise commonly used forestry equipment
5. Recognise common forest health problems
6. Understand forest fire behaviour theory and how it relates to the prediction, control, and use of forest fires

Timber and Forest Management

The student will be able to:

1. Conduct timber cruising activities
2. Calculate Annual Allowable Cut
3. List and discuss the contents of a forest management plan
4. Utilise the Manitoba harvesting guidelines to develop a cut-block
5. Describe the general contents of the Manitoba *Forest Act*
6. Discuss current forest issues
8. Discuss Sustainable Development and Forest Certification
9. Recognise non-timber forest resources

Natural Resources Management

Technology

What's it all about?

- Wildlife
- Fish
- Forests
- the Environment
- and ... You!

Where is it offered?

Keewatin Community College, The Pas, Manitoba

Year One – 1st Semester

- Botany
- Computer Applications
- Scientific Writing
- Surveying
- Water Resources
- Earth Science
- Emergency Fire Fighting

Year One – 2nd Semester

- Resource Disciplines
- General Ecology
- Navigation and GPS
- Biostatistics
- Zoology

Year Two – 1st Semester

- Fall Field Camp
- Forestry Practices
- Aquatic and Wildlife Ecology
- Geographic Information Systems
- Parks Management

Year Two – 2nd Semester

- Timber and Forest Management
- Fisheries Management
- Wildlife Management
- Public Relations and Communications
- Environmental Assessment

Fall Field Camp

Three weeks of practical experience in:

- Wildlife
- Fisheries
- Forestry
- Wilderness survival

Winter Field Camp

One week of:

- Trapper education
- Fisheries
- Winter Safety and Survival

Program Period

Two year diploma program
Classes run September – April

Career Opportunities

- Fisheries Technician
- Wildlife Technician
- Forestry Technician
- Environmental Technician
- Natural Resource Officer
- Resource Management Consultant

Annual Enrolment

50 students

Entrance Requirements

- Biology 40S
- English 40S
- Math 40S (Applied or Pre-Calculus)
- one of: Chemistry 30S or Physical Science 30G

Courses are available to assist students in meeting admission requirements.

Support for Aboriginal Students

A variety of financial supports have been available through the Assembly of Manitoba Chiefs.

Application forms available from:
The Registrar
Keewatin Community College
P.O. Box 3000
The Pas MB R9A 1M7
Toll-free Phone: 1-800-238-8508

For more information contact:

Ron Scott, Head
Dept. Health and Renewable Resources
Keewatin Community College
The Pas, Manitoba

So you Wanna Write a Proposal!

Victoria Grant
Natural Resources Canada, Legal Surveys

What is a Proposal?

- a plan or scheme put forward for consideration
- a document that outlines a response to a need or problem in your community
- usually includes a financial component that outlines costs and defines evaluation criteria.

Why Write Your Own Proposals?

- empowerment
- keeps the skills at home
- economical
- ownership of project
    - you will understand every aspect of the project.
    - you will succeed when you understand.
- independence

What Makes a Proposal Successful?

- well researched
- well written
- well organized
- clearly presents and answers the following questions:
  why, what, where, when and how

The Tool Box

What is needed?

- research
- the plan or map
- writing
- formatting and design

Let's Begin.
What do we need to do to get there?

The Plan:

1. Review the requirements or criteria of the program you are asking for funds from. It must fit with your project. Use the same language; i.e., if they use the words "participants" or "trainees", use the same words.
2. Identify the purpose of your project.
3. Establish a schedule (time frame of the project).
4. Gather information on costs, rental of equipment, capital costs, operating and maintenance gas for skidoos, salary costs, everything you can think of to manage the project.

Putting it Down on Paper: What will it look like?

Covering Letter

This is a courtesy statement explaining what you are attaching. Remember: the more funds you are requesting, the more specific and detailed your document should be.

Summary of Who You Are

Who will be responsible for the project: name the team leader or project manager.

Description of your community, the demographics, infrastructure and location. Depending on the nature of your proposal, you may want to add other things such as the need for employment, etc.

Vision Statement

This is the general goal you hope to achieve; i.e., to raise the level of employment in my community, or to raise employment rate from 75 to 100% participation.

Goal/Objective (Why?)

This is the project issue I want to solve through this project, and this is why it is a problem.

Methodology (How?)

This is the approach I would like to take in terms of time frames or key milestones. (Develop the approach according to your schedule.)

The old Lakota people were wise. They knew that human hearts away from nature became hard; they knew that any lack of respect for growing living things led to a lack of respect for humans too, so they always kept their hearts close to Mother Earth's softening influence.

Chief Luther Standing Bear
Lakota Nation

Conference Opening

Opening Prayer

Elder Frank Wesley

Welcome from Local and National Dignitaries

Harry Bombay, First Nation Forestry Program, National Management Committee

Dr. Yvan Hardy, Canadian Forest Service

Grand Chief Rod Bushie, Assembly of Manitoba Chiefs

Introduction to the Conference and Workshops

Joe De Franceschi
Natural Resources Canada, Canadian Forest Service

Welcome to the conference

This is the fourth conference of the First Nation Forestry Program in this region. Past conferences have been held in Saskatoon, Edmonton, Hay River (Northwest Territories) and now here in Winnipeg. Our region includes the Northwest Territories, Alberta, Saskatchewan, and Manitoba. The First Nation Forestry Program in our region is managed by individual committees in each province and territory and administered and delivered by the Canadian Forest Service from the regional office in Edmonton and the Saskatchewan liaison office in Prince Albert. These management committees have supported the conference with their guidance and advice during various stages of the conference and by approving and allocating funds to allow a number of First Nation people from across the region to travel and participate.

This year's conference is focused on training related to working in forestry related jobs. We hope you will find the sessions helpful to you when you return to your communities and we hope you are able to implement some of the ideas you get from attending these sessions. We hope the sessions will encourage communities to investigate the training opportunities available to them and the employment doors that can be opened.

The conference organizing committee consisted of the following Canadian Forest Service staff:

Christine Barker	(Edmonton)
Eugene Burnstick	(Edmonton)
Lorne West	(Edmonton)
Joe De Franceschi	(Edmonton)
Carol Mardell	(Prince Albert)
Michael Newman	(Prince Albert)

On behalf the organizing committee and on behalf of the four First Nation Forestry Program management committees in our region, welcome to the conference.

The First Nation Forestry Program

Steve Price
Natural Resources Canada, Canadian Forest Service

The Canadian Forest Service has been involved with First Nations in forestry for the last 10 years through:

- The Federal - Provincial Forestry Agreements
- The Indian Lands Forestry Program
- The First Nation Forestry Program

The Program

- federal program launched in 1996 for 5 years
- national
- economic development
- $24.9 million
- annual declining federal funds
- annual increasing First Nation contributions

Purpose

To improve economic conditions in Status Indian communities with full consideration of the principles of sustainable forest management

Objectives

- to enhance First Nation capacity to operate and participate in forest-based businesses
- to increase First Nations cooperation and partnership
- to investigate mechanisms for financing First Nation forestry development
- to enhance the capacity of First Nations to sustainably manage reserve forests

Canada's First Nations

Demographics:

Male: 314,577	Female: 327,837

Population:

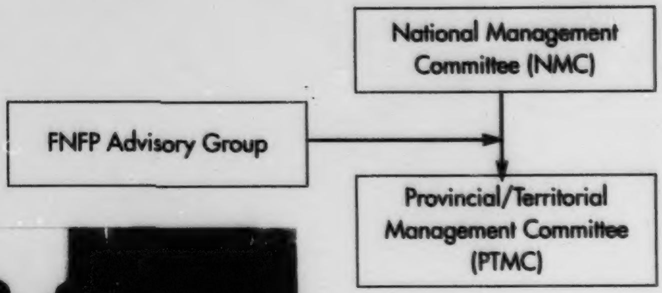
On reserve: 375,727	Off reserve: 266,687
Number Bands: 609	Reserves: 2,497

Total Area: 3.4 million ha
Forested Area : 1.4 million ha

Funding Structure, $million

Funding Source	96-97	97-98	98-99	99-00	00-01
DIAND	5.00	3.75	3.25	2.75	2.25
CFS	0.90	1.75	1.75	1.75	1.75
Sub-total	5.90	5.50	5.00	4.50	4.00
Other Sources	1.77	2.20	2.50	2.70	2.80
TOTAL	7.67	7.70	7.50	7.20	6.80

Management Structure


National Management Committee (NMC)
FNFP Advisory Group
Provincial/Territorial Management Committee (PTMC)

National Management Committee

Membership

- Natural Resources Canada
- Indian and Northern Affairs Canada
- First Nation representative

Responsibilities

- broad program direction
- allocates funds to provinces and territories
- manages central program activities

Provincial/Territorial Management Committees

Membership

- Natural Resources Canada
- Indian and Northern Affairs Canada
- First Nations

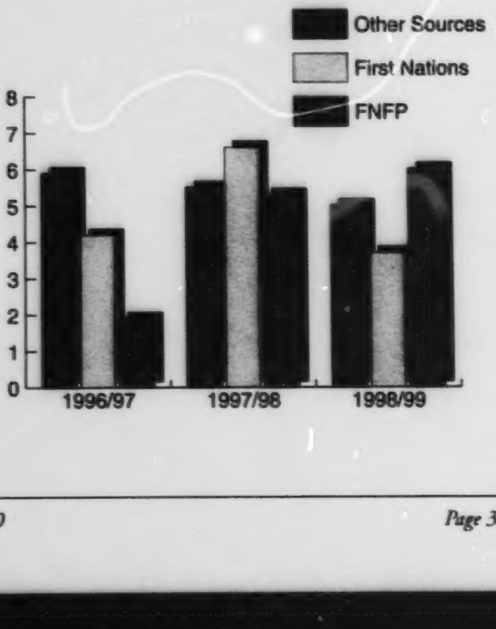
Responsibilities

- program management and administration
- accepts, reviews and approves project applications
- manages program activities

First Nation Interest

Year		Value ($ millions)
1996/97	329 Applications	51.0
	175 Approved	12.0
1997/98	306 Applications	34.1
	208 Approved	17.5
1998/99	283 Applications	25.7
	211 Approved	14.7

Partnership Funding

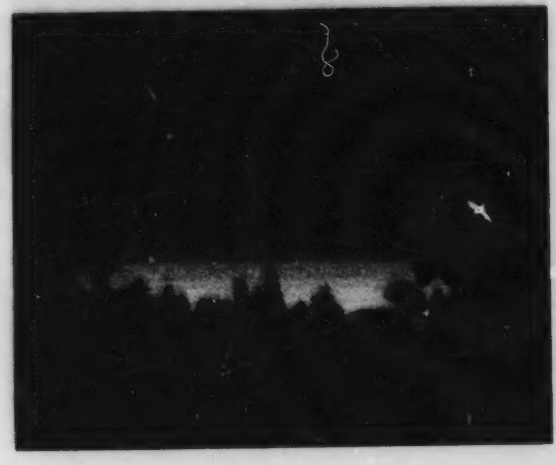


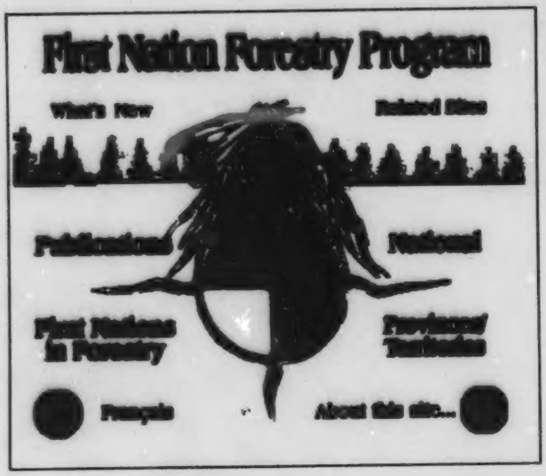
Project Expenditures 1996/97–1998/99

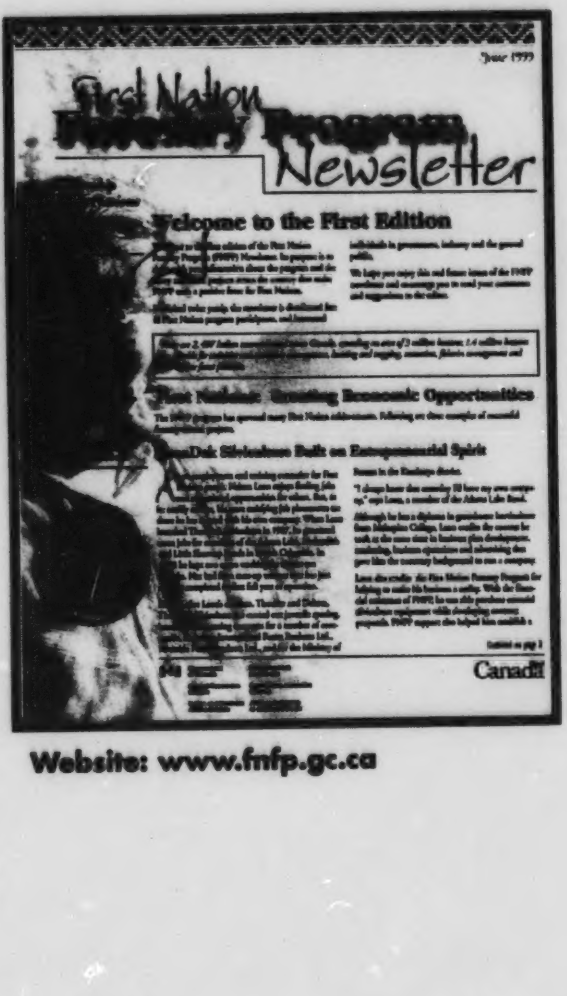
	Project Objectives				Other	Total
	1	2	3	4		
3 yr. total ($ millions)	16.4	8.5	0.3	10.5	2.3	38.0
%	43.2	22.3	0.7	27.8	6.0	100.0

1. Enhance capacity to operate and participate in forest-based businesses
2. Increase cooperation and partnership
3. Investigate mechanisms to finance First Nation development
4. Reserve forest management

Communications Initiatives







June 1999

First Nation Forestry Program Newsletter

Welcome to the First Edition

First Nations: Creating Economic Opportunities

Canada

Website: www.fnfp.gc.ca

Interim Review

A review was conducted mid-way through the program by Han Martin / Agfor Inc. - Joint Venture

- its goal was to evaluate the delivery of the program and recommend improvements
- all PTMC members, as well as First Nation clients from across Canada, were interviewed
- the review produced 26 recommendations

Review Observations

- The FNFP has resulted in the development of important relationships
- Aboriginal and non-Aboriginal people are meeting
- Best practices are emerging
- The FNFP is an adaptive process
- Many First Nations are becoming aware of forestry
- The FNFP is new
- There are success stories.
- There are shortcomings in the FNFP budget and duration
- The FNFP helps First Nations express their needs in forestry
- FNFP funding has been used to help secure other sources of funding
- The FNFP has been coordinated with other programs

Why has the program been so successful?

- First Nations are involved in making decisions on the allocation of funds for projects that meet community needs
- Forestry is important for the economic development of First Nation communities
- First Nations have been extremely successful in developing partnerships with the non-Aboriginal community
- The Program supports First Nations in the pursuit of economic self-sufficiency

Summary

- 12 management committees established
- strong First Nation forestry leadership established
- 580 projects funded
- recognizes and addresses Canada's regional diversity
- good strategic approaches to First Nation forestry needs
- First Nation contributions exceed initial expectations
- partnerships a major factor in program and project success

Keynote Speaker

Education is the key to forestry management opportunities for Aboriginal People … and YOU are the locksmith!

Gail Sloan, PhD
Caddo Tribe, Lawrence, KS USA
Director, National Centre for Cooperative Education in Natural Resources (NCCE)

NCCE – An organization serving American Indian and Alaska Native college students seeking education in natural resources related fields

Located on the campus of Haskell Indian Nations University, a 115 yr old treaty responsibility school which has 900 students from 130 tribes and 32 states.

NCCE – Like most successful ventures – resulted from the partnering of diverse groups with a common goal.

The common goal

Significantly increase the number of American Indians in professional level natural resources positions

Today – A look at the common challenges faced by Canadian Aboriginal People and American Indians seeking entry into the field of professional forestry

Five major causes of under-representation in professional-level forestry careers:

- Lack of academic preparation
- Lack of culturally-supportive academic environment
- Lack of funding and cooperation among funding sources
- Lack of work experience which 'makes sense of' academic curriculum
- Lack of role-models and mentors

NCCE's Goal: Significantly increase the number of American Indians (AI) in professional level natural resources positions.

Lack of role-models and mentors

Ideally, Aboriginals with degrees in forestry would speak to Aboriginal secondary school students.

Until the number of Aboriginal foresters increase, this role can be filled by non-Aboriginals who are sensitive to the challenges of Aboriginal students, many of whom may never have considered college and/or studying natural resources.

Lack academic preparation

Most Aboriginal and Indian students lack adequate science and math background and/or have been out of school so long that their academic experience has become "rusty".

There are solutions to the lack of academic preparation:

For those with lots of time and self-discipline: Correspondence courses for review, Internet coursework, and high school equivalency test reviews are possibilities.

It is important to utilize colleges, universities, and technical schools that accept a student where he or she 'is' rather than where s/he 'should be'.

An example of a student who successfully overcame these challenges is Pauline, a traditional young Navajo woman who in 1989 began her first year of education at Haskell. She did not learn English until age 6, made a score of 1 out of 36 on the English portion of the college entrance exam. Her parents speak no English and live in a hogan with no plumbing or electricity.

At Haskell, Pauline took a year of preparatory coursework including: Basic Math, Pre-algebra, basic English composition, and general college coursework such as psychology and history.

This coursework, with Math and English composition at the first year student level, is required by most universities in both Canada and the States.

Many First Nations people, like Indian students in the States, can be considered "non-traditional" students. As a non-traditional student:

- you are older than the typical 18-20 yr old fresh from high school student
- you may have been in the workforce, and out of school, for years
- you may have a family to support.

You, like many Indigenous students, need colleges which will offer academic, financial, and cultural support. There are Canadian educational institutions which offer scholarships or grants for Aboriginal students, but you must seek them out.

The National Aboriginal Forestry Association (NAFA) has created a catalogue which assists in this project.

Once the decision to pursue a degree is made, finding the right college or university can be the difference between success and failure.

Lack of culturally-supportive college environment

This can be crushing: In 1993, 3,300 students in the USA completed a forestry related degree. Of that number, 13 were Native American.

At Haskell, we have developed articulation agreements and ongoing working relationships between:

Universities receiving transfers from Tribally Controlled Community Colleges and universities with a 'critical mass' of American Indian students, so that "reaching back, looking forward" mentoring techniques can be used.

Lack of meaningful work experiences

To provide meaningful work experiences it is necessary to replace minimum wage 'make-work' jobs on reservations and in urban settings with ones which provide competitive wages. These jobs can show students the positive impact they can have on the environment.

Providing 'shadowing' experiences and/or mentoring during the summer work experience is also essential.

Ideally, available positions would allow students to work on or off Indian lands and would allow both the student and the employer to 'try out' each other before making a more formal commitment. Such a commitment might mean the promise of summer employment and a professional level position after graduation, financial assistance for university costs, and a commitment to accept such a position if it is offered.

What ever happened to Pauline, the young Navajo student?

After completing her first year studies, she accepted a 'blind date' to work in a Montana forest where she experienced a part of the country and a cultural that was new to her. She 'shadowed' a landscape architect for two days and she came back to Haskell with a goal: to become a landscape architect.

Pauline transferred to a college to complete her second year studies and begin her third year.

She transferred from the university in Oklahoma after one year to a university in Arizona. She was transferred, at her request, from her cooperative education work location to a forest in Montana to be closer to her tribe.

Today, five years after completing her landscape architecture degree with a grade point average of a "B-", she is married to a Navajo man and is the proud mother of a 4-year-old daughter. She has completed the big circle home, moving from her Forest Service position to a tribal one and is managing the Navajo tribe's greenhouse operation

Today's meeting can result in goals very similar to that of NCCE – To significantly increase the number of Aboriginal people in professional level natural resources positions.

Your challenge is to be the locksmith and help find the key to overcoming...

1. Lack of academic preparation
2. Lack of culturally-supportive academic environment
3. Lack of funding and cooperation among funding sources
4. Lack of work experience which 'makes sense of' academic curriculum
5. Lack of role-models and mentors

To meet this challenge, each of you must identify and overcome these and other obstacles which stand in the way of meeting the goal of an increase in the number of Indigenous foresters in Canada.

For more information and/or a complete article on the development of Haskell's natural resources program and the NCCE program, history, and goals, contact:

Dr. Gail L. Sloan
Natural Resources Liaison
Haskell Indian Nations University
155 Indian Ave
Lawrence, KS 66049, USA
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Plenary Session

Forest Development Opportunities for Aboriginal Communities

Forest Economic Development in Saskatchewan

Growing for Tomorrow

Les Cook
Saskatchewan Environment and Resource Management

Saskatchewan's Forests

A well kept secret...

- Over 50% of Saskatchewan is forested
- Forest belt stretches from Meadow Lake to Hudson Bay, and extends north to NWT
- Boreal forest – primary species are spruce, pine, and aspen

Forest Industry in Saskatchewan

An Economic Cornerstone for over 100 Years

- Logging has contributed to economy of north central Saskatchewan since the1890s
- 31 communities dependent on forestry, including 10 First Nation reserves

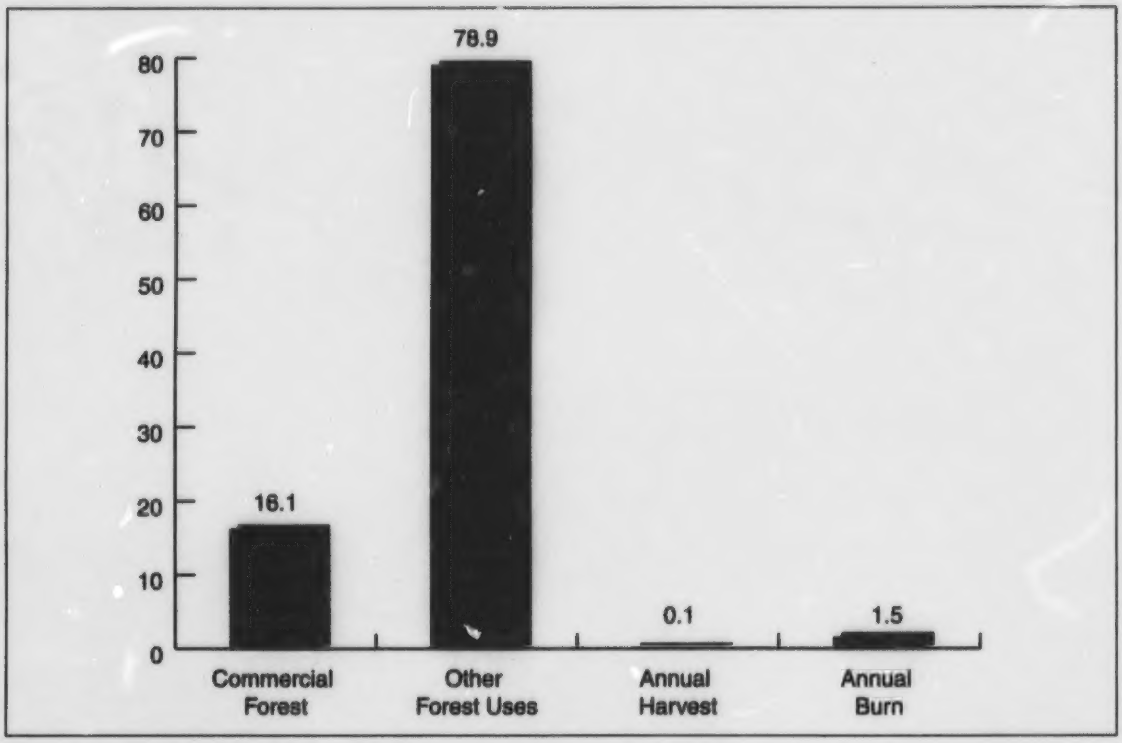
Provincial Forest Economy

Foundation for Growth

- About $750 million Value of Shipments annually
- Industry employs about 9,000, directly and indirectly

Provincial Forest

Forest Use Today



Existing Industry

Three Big Players

- Norsask Sawmill – Meadow Lake (Owned by Meadow Lake Tribal Council)
- Millar Western Pulp Mill – Meadow Lake
- Weyerhaeuser
    - Pulp and Paper Mill – Prince Albert
    - Sawmill – Big River
    - Plywood Plant, Oriented Strand Board)SB) Plant – Hudson Bay
    - Sawmill – Carrot River

The Small Business Sector

- Zelensky Brothers – La Ronge Sawmill
- Green Lake Metis Wood Products Sawmill
- L&M Wood Products – Glaslyn Sawmill, wood treatment plant
- Over 200 other sawmills, wood treatment plants and fuelwood operators throughout northern Saskatchewan

New Direction in Forest Management

Our commitment to stewardship and sustainable use

- Forest Management Policy Framework
    - Cabinet established new vision, strategic objectives, and principles for our forests
- *Forest Resources Management Act*
    - legal framework for sustainable forest management
- *Forest Resource Management Regulations*
    - new tools for implementing our forest management policy – planning, public involvement, standards, enforcement

Saskatchewan's Forest Development Strategy

Sustainable Growth

- maximize sustainable use of wood supply
    - expand our primary forest products sector especially lumber and OSB
- develop value-added manufacturing sector
    - examples: engineered wood products, housing systems, millwork, furniture
- establish forestry centre of excellence as focus for knowledge-based tertiary industry

Forest Economic Conditions

Why can forest industry expand now?

- present harvest is less than 50% of sustainable wood supply
- other jurisdictions have fully allocated their timber resources
- despite "Asian flu", North American demand for wood products is strong
- Saskatchewan's business climate is conducive to attracting investment

The Opportunity

Underutilized Sustainable Harvest

- independent scientists confirm forests contain much more sustainable harvest
- additional 1 million cubic metres to be used by Weyerhaeuser
- 1.45 million cubic metres of surplus timber from the Weyerhaeuser agreement area withdrawn for reallocation
- wood supply review initiated for Mistik Management to determine their surplus

Building the Foundation

Forest Industry Expansion

- 10,000 new jobs (direct and indirect)
- Over $850 million in new investment
- $750 million increase annually in GDP

Principles for Wood Allocation

Job creation and business development

- diversification of forest economy
- direct participation for Aboriginal people and northern communities
- corporate responsibilities for:
    - Environmental assessment
    - Planning and public involvement
    - Sustainable forest management
- social, economic, and environmental sustainability

Contingent Allocations

- all allocations subject to public review processes
  - Environmental Assessment, Forest Management Plans, Integrated Land Use Plans
- proponents must complete business plans, begin construction, and initiate production within time limits

Ensuring Sustainability

Implementing Environmental Stewardship

- Land Use Plans – balancing competing interests, extensive public involvement
- 20 Year Forest Management Planning – planning for sustainability
- Environmental Impact Statements – the application of science
- Ecological Monitoring – auditing the results

Ensuring Biodiversity

Finding a balance between forest use and protection

- protected areas network
- mandatory reforestation
- new forest management practices
  - New harvesting techniques
  - Habitat protection and enhancement
- a commitment to adaptive management
- let's learn from experience

Weyerhaeuser

- $90 million expansion to Big River Sawmill
- $22 million Wapawekka Sawmill at Prince Albert, in partnership with Lac La Ronge, Peter Ballantyne, and Montreal Lake First Nations
- 500 direct jobs, 1000 indirect jobs
- $315 million environmental upgrade underway at Prince Albert pulp and paper complex, including co-generation

Saskfor MacMillan

(now owned by Weyerhaeuser)

- land use plan, 20 year forest management plan and environmental impact assessment completed and approved prior to signing new Forest Management Agreement
- construction now underway on $175 million world scale OSB plant in Hudson Bay
- over 600 direct jobs, 1,200 indirect jobs

Peter Ballantyne Cree Nation / Ainsworth Lumber

Amisk – Atik – Suggi Wood Supply Area

- Phase I: 1999
  - Sawmill at Deschambault Lake
- Phase II: 2000
  - Sawmill at Creighton
  - Finger Jointer plant in Prince Albert
  - Woodlands operation
- total Investment $73 million
- 360 direct jobs, 720 indirect jobs

Lac La Ronge Indian Band/ Zelensky Bros./Juniper Lumber

Lac La Ronge Wood Supply Area

- Juniper Lumber of New Brunswick new industrial partner
- major sawmill and remanufacturing facilities at La Ronge
- over 200 direct jobs, 400 indirect jobs

Suntec/James Smith Cree Nation

- $8 million sawmill
- Zenon Park, on James Smith Reserve
- 103 direct jobs, 206 indirect jobs

Northwest Communities/ Clearwater Forest Products

Besnard Wood Supply Area

- partnership of five Metis communities
- sawmill at Beauval
- $11 million investment
- Besnard wood supply area
- 165 direct jobs, 330 indirect jobs

Norsask/Ainsworth

Surplus Hardwood

- wood supply being negotiated
- $145 million OSB mill for Meadow Lake
- 340 direct jobs, 680 indirect jobs

Green Lake Metis Wood Products – Stillwater

Remanufacturing

- finger jointer operation
- partnership with established operator
- $6.5 million in new investment
- 40 direct jobs, 80 indirect jobs
- facilities in Green Lake and Saskatoon

L&M Wood Products

- $2 million sawmill upgrade and new wood products treatment plant at Glaslyn
- 40 direct jobs, 80 indirect jobs

Small Operators

- doubling of allocations from original Weyerhaeuser area and additional wood supply from other areas
- 10 companies awarded initial allocations after open RFP process
- up to 935 direct jobs and 1,870 indirect jobs
- over $10 million in new investment

Growing the Industry

Phase 2: Expanding the Base

- up to 15,000 additional new jobs can be created over next decade:
  - new mill using residual softwood chips
  - secondary manufacturing
  - knowledge-based industry
  - new wood supply from agroforestry
  - development of wood supply reserves protected by enhanced fire protection

Surplus of Softwood Chips and Pulpwood

Next Steps

- expansion of sawmill industry will create enough wood chips and pulpwood to supply another major facility
- pursuit of another major softwood user underway
  - newsprint
  - pulp mill
  - medium density fibreboard

Expanding the Wood Supply

Next Steps

- investment driven fire protection model
  - reducing losses due to fire
  - better performance allows use of fire reserves for new allocations
- forested agriculture lands
  - accessing forested lands outside of the provincial forest
  - opportunity to create agroforestry industry, diversification for farm producers

Value Added Strategy

Next Steps

- developing strategy to aggressively pursue opportunities in remanufacturing, engineered wood products, fabrication
- working with Saskatchewan entrepreneurs
- attracting new investment to Saskatchewan
- major increase in jobs generated – Ontario creates over 4 times as many jobs per cubic metre of wood harvested

Saskatchewan Forestry Centre of Excellence

Next Steps

- centre for knowledge development and export, consulting services, research, market and product development, training
- build on Saskatchewan's strengths such as the involvement of Aboriginal people in forestry, forest fire protection, community/industry partnerships

Tembec

Bob Yatkowsky
Pine Falls Paper Company Limited/Tembec

Corporate Vision

"A company of people building their own future"

Founding Principles

- employee involvement and commitment
- representation on Board of Directors
- small capitalist: encourage employee ownership
- shared risk: participation in profit sharing
- open and honest lines of communication

Company History and Overview

- large multinational shut the Temiscaming mill down in 1972
- company was formed in 1973
- a unique and unprecedented employee and management LBO
- original assets $2.5 million
- 350 employees

The Company Today

- Tembec is one of the largest forest products companies in Canada
- total assets > $2.7 billion
- 7,000 employees
- annual sales: > $1.85 billion (est. 1999)
  > $2.2 billion (est. 2000)

Corporate Mission

Tembec's mission is to be a low-cost, profitable integrated forest products company, converting forest resources into competitive and innovative quality products for customers while protecting the environment and creating positive long-term social, cultural and economic benefit for the region and its people, employees and shareholders.

First Nations Policy

Introduction

- Tembec recognizes the historical and ongoing traditional uses of lands on or near the Company's forest operations.
- Based on the importance of access and use of these lands by both Tembec and the First Nations, a corporate policy has been written to guide the development of the long-term relationships that will be beneficial to the First Nations, the Company, and the public.
- This will be built on the specific social and economic needs of individual First Nations communities that will complement the needs of Tembec.
- It is the belief of the Company that it makes sound strategic business sense to recognize the role of Aboriginal people as stakeholders in Canada's economic growth, and to proactively build mutually beneficial relationships with Aboriginal people.

Scope

The scope of this policy is to define the relationship with respect to first Nations communities impacted by the Company's activities.

Policy

Accordingly, the Company undertakes to conduct its business activities with First Nations according to its corporate principles and guidelines which require it, amongst other things, to:

1. conduct business and relationships with respect, openness, trust, understanding, and integrity.
2. establish policies and guidelines in all phases of its operations which provide for responsible stewardship and sustained yield and development of our resources, while protecting the health and safety of employees, customers and the First Nations.
3. develop commercial relationships with members of the First Nations communities which consistently meet our specifications for quality, service, price, and to build partnerships on trust, mutual benefit and understanding of each other's expectations.
4. ensure that First Nations communities or groups receive the same nondiscriminatory consideration as all other vendors offering services and ensure nondiscriminatory hiring practices whereby First Nations candidates may apply for jobs in the Company in fair and equitable competition with others.
5. each Division shall:
   designate an individual reporting to the senior division manager responsible for forest resource management who will be responsible for communication and consultation with the First Nations.
6. in the preparation of forest management plans, the Company shall work with First Nations to include traditional knowledge and ecological values into the Company's planning process to the extent it is legally and economically feasible and respects corporate principles and guidelines. Such information will remain the exclusive property of the parties and remain confidential to the community and the Company.
7. work with First Nations to establish scholarship funds to promote education and work in partnership to support the development of labour force training programs and employability training.
8. encourage participation in social and cultural activities of First Nations in order to foster mutual understanding and respect.

Pine Falls Paper Company

A Brief History

- established in 1926 by J.D. McArthur as the Manitoba Pulp and Paper Company
- first paper production was in January of 1927
- controlling interest taken over by Abitibi in 1928
- in September 1994, Abitibi sells the mill to a management group, mill employees and a private investor
- in February 1998, controlling interest in the Pine Falls mill is sold to Tembec, a Canadian forest-based company out of Quebec, Canada.

Employment Opportunities within the Forest Industry

In the harvesting sector

feller buncher operators
slasher operators
skidder operators
tractor operators
truck drivers
loader operators

In the forest management sector

harvest planning
renewal planning and surveys
planting and spacing
monitoring and auditing
road layout

In wood processing facilities

trades people: electricians, welders, pipefitters, millrights
operators
accounting
supervision
clerical
maintenance: mechanics, first, second, third, and fourth class engineers

In road construction and maintenance

tractor operators
grader operators
backhoe operators
scraper operators
loader operators
crusher operators
truck drivers

In related support sectors

garages and parts service
equipment suppliers
fuel dealers
trucking

Partnership Opportunities

Wood Utilization Plants

sawmills
value-added plants
post plants
log homes/lodges

Community Involvement Potential

- joint planning on Sustainable Forest Management Licence areas
- participating in Advisory Committees
- co-management board
- service industries
- tree nurseries

Tourism

Pine Falls Paper Company's Involvement with the First Nation Forestry Program

- log home/lodge construction, Berens River
- harvesting training program, Lake St. Martin
- harvesting training program, Bloodvein
- log home/office construction, Sagkeeng
- log home/heritage centre, Fisher River Cree Nation

Pine Falls Paper Company/Tembec

Initiatives

- Memorandum of Understanding between Signatory First Nations, Manitoba Government and Pine Falls Paper Company identifies key principles for joint venture sawmill, a joint forest management licence, a road proposal, Berens River Sawmill
- will upgrade to TMP (thermo mechanical pulping)
- proposed joint venture sawmill with signatory First Nations
- proposed joint sustainable forest management licence area to support the joint venture sawmill and pulpmill
- hiring policy to increase First Nation employment in the mill and joint venture sawmill
- mentorship program

Building Relationships
Alberta-Pacific Forest Industries Inc.

Mike Walton, Business Unit Leader, Relationship and Business Building
Dave Cole, Community Coordinator, Fort McMurray Office
Alberta-Pacific Forest Industries Inc.

Background

Located in northeastern Alberta, Alberta-Pacific Forest Industries (Al-Pac) is a world-class facility. It is the largest single-line kraft pulp mill in North America and typically produces near the top 10. The pulp mill is designed to produce a minimum of 1,500 ADt (Air Dry metric tones) per day of bleached hardwood pulp or 1,250 ADt of bleached softwood pulp. Al-Pac directly employs 431 people and contracts, mostly through its Woodlands operation, another 600 people.

The greenfield mill began construction in May 1991 and operations started up on September 1, 1993. The 1.3 billion dollar capital investment injects approximately $215 million annually into local and provincial economies. Multiplier effects create 3,600 person-years of employment, and $128 million dollars of tax revenues are directed to the Federal and Provincial governments.

Al-Pac harvests predominantly trembling aspen and balsam poplar. The Forest Management Agreement (FMA) between Al-Pac and the province of Alberta permits Al-Pac to harvest timber on a perpetual sustained yield basis from 58,000 square kilometres of provincial Crown Land. The majority of the landbase from which the timber resources are harvested also falls within the boundaries of Treaty 8.

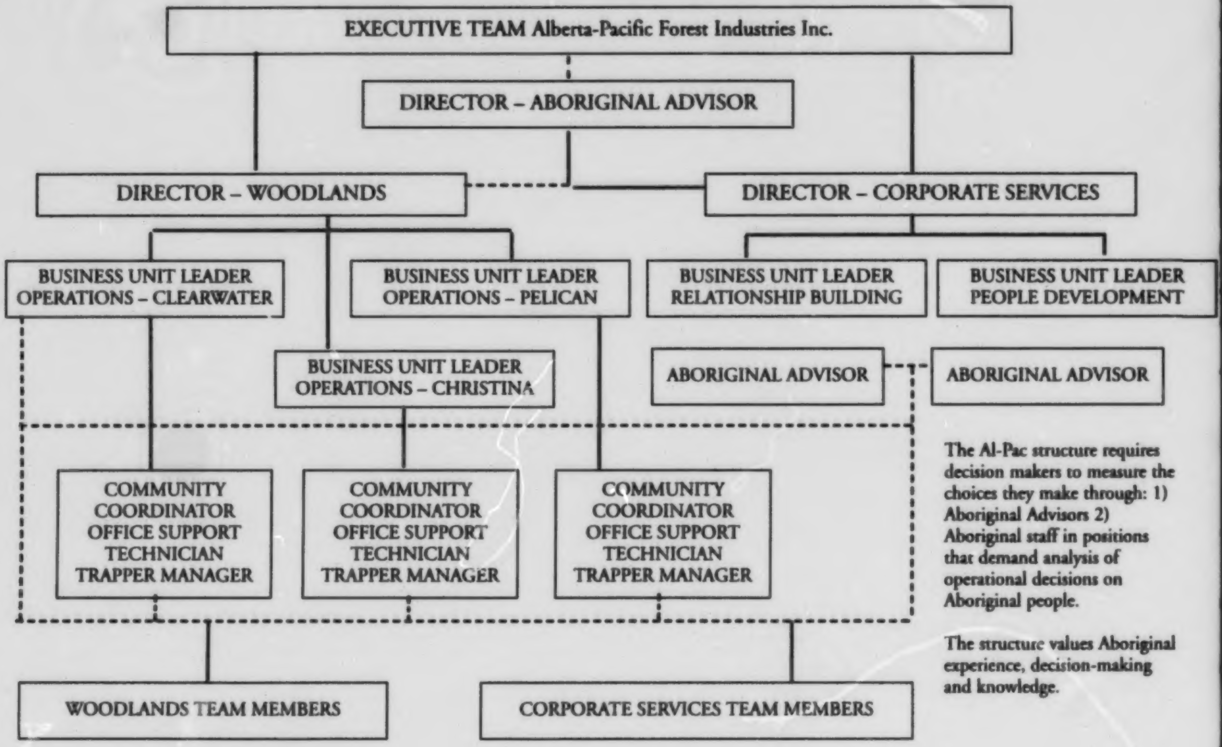
The entrepreneurs and leaders who convinced investors, governments and local people of the opportunity for a pulp mill did so with appreciation for the responsibility industry had to local people and specifically Aboriginal people.

Seven years after operations began the complexity of building relationships with Aboriginal peoples is increasingly more complex. What is absolutely critical for all parties to recognize during the process of relationship building is despite overwhelming challenges at times, everyone is striving toward a future that is better than what exists presently.

To achieve a better future, Al-Pac introduced early to the organization an Aboriginal Affairs team. Entirely staffed by Aboriginal people, the team was responsible for beginning the process of educating non-Aboriginal staff to the world views and culture of the people the organization was working with on a day-to-day basis. A significant step occurred in 1998 when the Aboriginal Affairs team finalized the Aboriginal Affairs Business Plan. Observing that integration with every aspect of the operation was critical for the Aboriginal Affairs team to influence the thinking, understanding, and appreciation of Aboriginal issues by non-Aboriginal people. The Aboriginal Affairs team was reorganized in December 1999. Reassignment to the Corporate Services division allows access to and influence over such key areas as Staffing, Training, Human Resources Management, Community Relations, Communications, Government and Industry relations, and economic development. Significantly, a Corporate Director, Aboriginal Affairs was assigned to the Executive Team.

Presently, as a result of lessons learned over the last seven years, Al-Pac is working towards addressing the number and complexity of issues facing organizations that wish to work in partnership with Aboriginal peoples. The capacity for Al-Pac to listen, hear, and understand the urgency of issues for First Nation and Metis communities within their sphere of influence is very high. This is not to say that Al-Pac was not listening in the past. The company was. The difference now is an alignment as to how to respond to what has been heard in a way that a) verifies what was understood to be heard, and b) is more strategic and timely. As well, Al-Pac through experience has learned how to listen better by knowing real cultural differences exist between Aboriginal peoples and between Aboriginal peoples and Al-Pac (see Figure 1, Aboriginal Influence on Decision Making).

Figure 1: Aboriginal Influence on Decision Making


EXECUTIVE TEAM Alberta-Pacific Forest Industries Inc.
DIRECTOR – ABORIGINAL ADVISOR
DIRECTOR – WOODLANDS
DIRECTOR – CORPORATE SERVICES
BUSINESS UNIT LEADER OPERATIONS – CLEARWATER
BUSINESS UNIT LEADER OPERATIONS – PELICAN
BUSINESS UNIT LEADER RELATIONSHIP BUILDING
BUSINESS UNIT LEADER PEOPLE DEVELOPMENT
BUSINESS UNIT LEADER OPERATIONS – CHRISTINA
ABORIGINAL ADVISOR
ABORIGINAL ADVISOR
COMMUNITY COORDINATOR OFFICE SUPPORT TECHNICIAN TRAPPER MANAGER
COMMUNITY COORDINATOR OFFICE SUPPORT TECHNICIAN TRAPPER MANAGER
COMMUNITY COORDINATOR OFFICE SUPPORT TECHNICIAN TRAPPER MANAGER
WOODLANDS TEAM MEMBERS
CORPORATE SERVICES TEAM MEMBERS

The Al-Pac structure requires decision makers to measure the choices they make through: 1) Aboriginal Advisors 2) Aboriginal staff in positions that demand analysis of operational decisions on Aboriginal people.

The structure values Aboriginal experience, decision-making and knowledge.

Barriers that Exist to Building Relationships

1) *Relationships are built then agreements are signed.* For many organizations the pressure of being a "business" compels a structured process to deal making. The barrier in this case is a failure by the organization that wishes to achieve a deal to understand that a relationship must exist before the deal making occurs. To be clear, a trusting relationship is what should exist. How the organization achieves a trusting relationship has a great deal to do with two things:

   1) The organization's design and structure, and
   2) The capacity of the individuals within the organization to demonstrate tolerance, learning, and listening.

   Regardless of the size of the organization a commitment to responsiveness is essential. Therefore, the organization, whether it is a handful of people or thousands, must communicate the importance of building relationships by assigning responsibility for that purpose. This sends the same message to two important groups. Internally, the organization 'sees' the priority and externally, Aboriginal peoples witness a commitment beyond simply partnerships.

Internally, the organization begins the process of aligning the behaviour of individuals with the intent of building meaningful relationships built on respect that culminate in trust between the parties. A trusting relationship will never be achieved when behaviours emphatically communicate hypocrisy or untruthful intent. Organizations can communicate, broadcast, and transmit whatever messages they choose. Pointedly, it is the behaviour of the people involved with Aboriginal people that determine the credibility of the organization. In familiar business jargon you have to "walk your talk."

2) *Politics, politics, politics.* There is no simple way to describe this except to say that this is the most complex of issues. It is an area that could paralyze an organization in status quo behaviour and that is a huge mistake. Nothing is status quo for Aboriginal peoples. It is a position that is fundamentally not acceptable to Aboriginal leadership. If an organization finds itself deferring action because of the chaos associated with Aboriginal Rights, Treaty Rights, Land Claims, Supreme Court Decisions, and unfamiliarity with the world views of the cultures involved, the organization is in a perilous circumstance. Barriers are not removed through inaction. Rather, more barriers are created. It is the organization's choice to take action or not.

The organizations that take action are confident organizations. That is, they are confident they have an organizational design and structure that knows how to listen and respond because they have tolerant, knowledgeable people who are respectfully working with Aboriginal people on a day-to-day basis. As a cautionary note, organizations must be vigilant against false confidence resulting in a disconnect between what the organization says and what it does.

An organization committed to build relationships and confident in its ability to take action will recognize those things they have no control over and set them aside for others to address. In many cases, the issues associated with Aboriginal rights, title, and land claims can be respectfully set aside so the organization that has pressing business issues can address them. The pressing business issues of an organization like Al-Pac speak directly to pressing community issues faced by local Aboriginal leaders. The availability of an educated and well-trained work force from Al-Pac's point of view can equally mean a stay-in-school program – resulting in more high school graduates from the Chief's point of view. The Chief's need to address the higher than Canadian average of diabetes in his or her community equally addresses Al-Pac's need to have a healthy workforce. The Chief's need to have employment for his or her community members is Al-Pac's need to have employees.

These examples are raised simply to illustrate that bigger issues do not have to cause either First Nations or industry to stop doing what both know are the right things to do to achieve shared outcomes.

3) *Systemic barriers that result in discrimination.* Inherent to actions undertaken by human beings is bias. Often thought to be a bad thing, bias is neither good nor bad. Bias simply is. However, bias undetected will cause skewing of measurements, impediments to analysis, and most dramatically, failure of the experiment, system, or process. An organization is wise to assume bias within its existing systems and processes. In this case, such bias could result in Aboriginal people dropping out of the recruitment, retention, promotion, and training efforts of an organization. Training is recognized as an essential part of improving the ability of Aboriginal people to compete for jobs in the forest industry. Given the importance of training to the overall shared success of both Industry

and Aboriginal communities, training programs must be carefully reviewed for barriers that inadvertently discriminate against Aboriginal trainees. At present 37 employees or 8.4% of Al-Pac's workforce is Aboriginal. The company's expectation is the number will increase as it becomes more adept at understanding and addressing barriers in the workplace.

Al-Pac's Aboriginal Affairs Business Plan

Al-Pac directly affects 15 Aboriginal communities. Created in 1998, the Aboriginal Affairs Business Plan details how Al-Pac will build the skills necessary within the organization to achieve meaningful, trust relationships with Aboriginal communities in and around the Forest Management Agreement area.

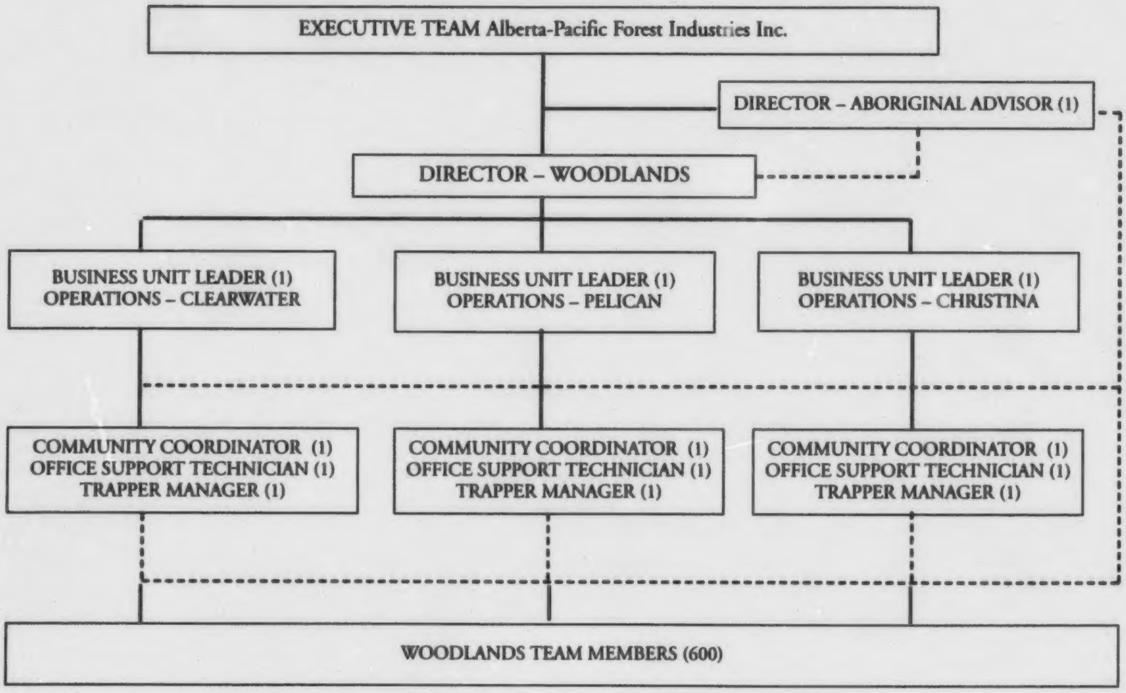
The Aboriginal Affairs Business Plan, endorsed by the Executive of the organization, focuses on six areas:

- consultation with Aboriginal peoples
- business building
- employment
- trapping management
- capacity building
- administration

Critical to the successful implementation of the business plan are 12 positions, staffed by Aboriginal people. Within the Woodlands Operations Teams nine positions are distributed within three geographic areas, reporting to the Business Unit Leader for each geographic area. Three positions exist in each area. They are: Community Coordinator, Office Support Technician, and Trapper Manager (see Figure 2, Aboriginal Influence on Decision Making, Woodlands).

In Corporate Services, two Aboriginal Advisors provide functional guidance to nine senior staff, all of whom report to two Business Unit Leaders; Relationship and Business Building, People Development and Organizational Performance. At

Figure 2. Aboriginal Influence on Decision Making, Woodlands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WOODLANDS TEAM MEMBERS (600)

the Executive level, the Director, Aboriginal Affairs provides advice and guidance to the senior management team (see Figure 3, Aboriginal Influence on Decision Making, Corporate Services).

Essentially this combination of positions addresses the operational and policy requirements of the organization and importantly communicates strong commitment to achieving a better future with Aboriginal people. Over the next three years Al-Pac will focus on how the organization can assist in building capacity within Aboriginal communities and how to recruit and retain qualified Aboriginal people. All the while key activities must take place in five areas associated with Aboriginal Affairs management: Political Liaison, Policy Development, Corporate Issues Management, Field Offices, and Operations.

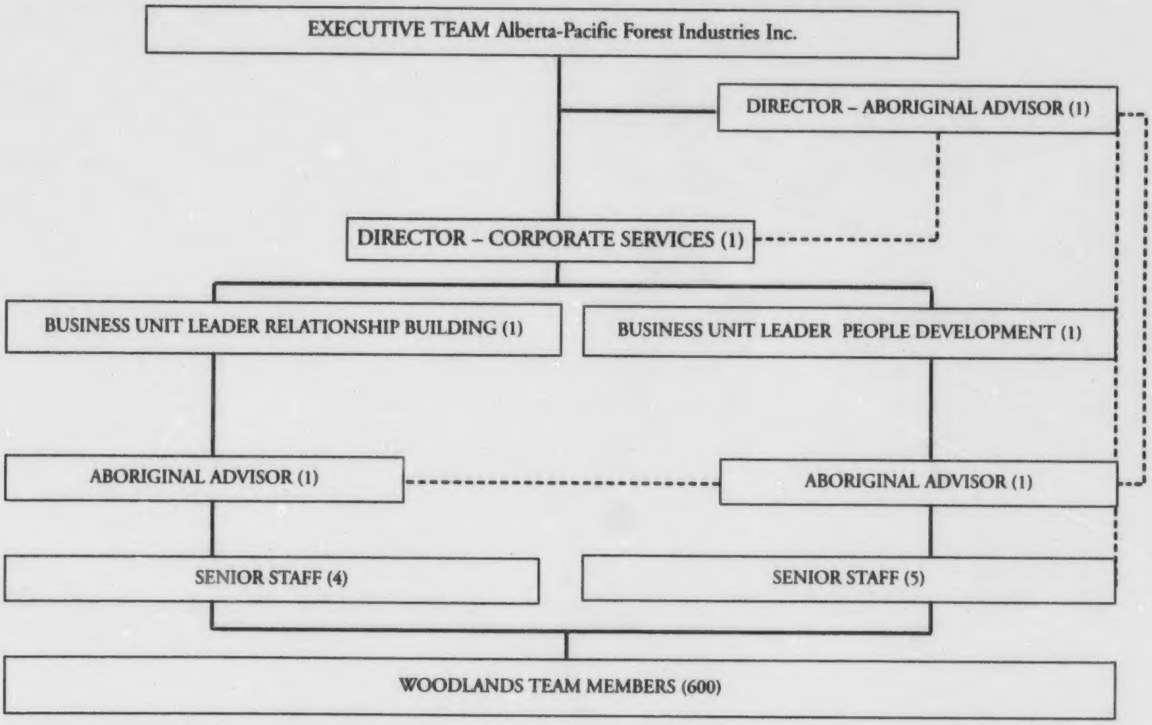
The effort by Al-Pac to get things done despite the uncertainty associated with Government and Aboriginal relations demonstrates a measurable commitment to Aboriginal communities. However, it is not enough. Al-Pac will continue to work at its internal processes and build the organization that can truly claim a trust relationship with Aboriginal peoples.

Building Relations

It is with clear intent that Al-Pac works toward achieving the Aboriginal Mission Statement "…commits to Aboriginal participation in all aspects of the company." Al-Pac's history with Aboriginal communities and its people have been a trying exercise for all parties. There have been successes as well as disappointments. Each are learning opportunities and in retrospect are used as benchmarks to improve relationships.

There are a number of reasons why Al-Pac is focused on building true relations with Aboriginal communities. My colleague suggested several reasons. As for my part, the presentation will focus on two projects having favourable results in building and maintaining relations. The paper in and of itself

Figure 3. Aboriginal Influence on Decision Making, Corporate Services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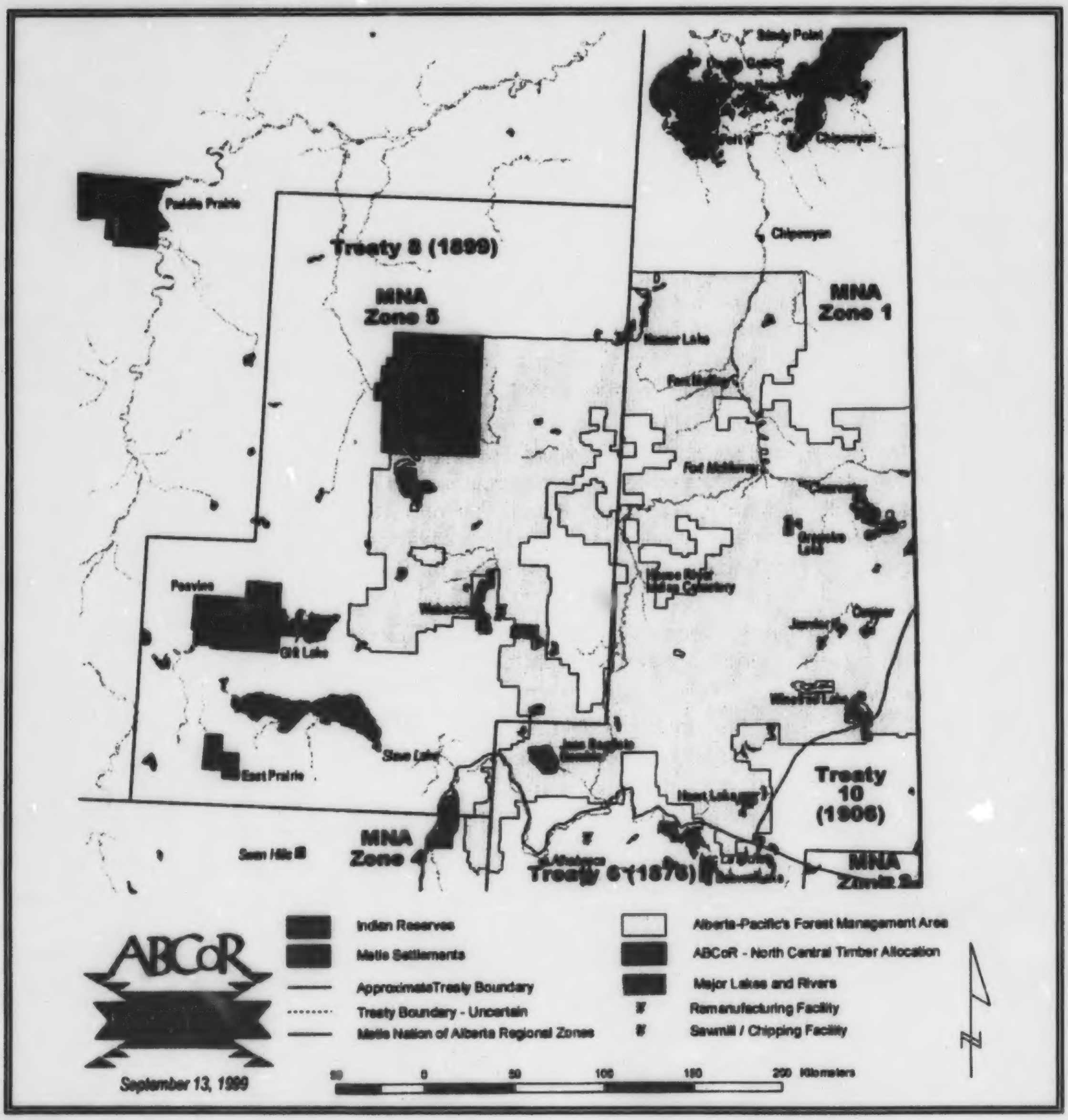
DIRECTOR – CORPORATE SERVICES (1)
BUSINESS UNIT LEADER RELATIONSHIP BUILDING (1)
BUSINESS UNIT LEADER PEOPLE DEVELOPMENT (1)
ABORIGINAL ADVISOR (1)
ABORIGINAL ADVISOR (1)
SENIOR STAFF (4)
SENIOR STAFF (5)
WOODLANDS TEAM MEMBERS (600)

describes additional projects that all parties have agreed are good examples of building relations. Before presenting these projects clarification is needed on a few points.

1. Focus remains on improving and strengthening relations as evidence demonstrates that all parties have exercised tremendous tolerance and patience while working to achieve exemplary relations.
2. Corporate commitment continues to be displayed via company personnel assigned to the various projects, extending contractual agreements, and Al-Pac's financial support to Aboriginal community projects. Al-Pac continues to demonstrate support for Aboriginal development by addressing socio-economic conditions within Aboriginal communities.

Figure 4. Indian Reserves and Metis Zones



3. Many of the projects initiated are in the Woodlands division, external to the mill site proper. Other than the millwright apprenticeship program within the mill, Aboriginal involvement on an internal level has been minimal. A process is under way to assess why external projects are greeted with relative success while Aboriginal involvement remains minimal in other aspects of the company. Study results will aid in the development of mechanisms to overcome unseen barriers and assist in designing an environment supportive of greater Aboriginal involvement.
4. While Northern Alberta contains only 9.3% of the total population of the Province, it does contain 51% of the First Nations and all of the Metis Settlements in Alberta. This unique situation has helped drive Al-Pac's interest in playing a greater role in the economic and social well-being of northern Aboriginal communities.

Christina River Enterprises owned and operated by Fort McMurray #468 First Nation will be reviewed first followed by the Horse Logging Operation owned and operated by members of the Metis Settlement of Kikino. Figure 4 depicts areas cited in this conference paper.

Christina River Enterprises Ltd. (CRE)

Box 6040
Fort McMurray, AB T9H 4W1
780 334-2446 (phone)
780 334-2421 (fax)
Contact: Eleanor Steinhauer-Halfe,
Contracts Manager

1992 – A working agreement with Al-Pac was signed. This agreement entailed capacity development for 15 Fort McMurray community members. The revolving training agreement focused on certificate training for Forest Technicians.

1992-1997 – Five out of the 15 trainees were employed for five years. Contract included block layout, road layout, timber cruising, and silviculture projects. For a couple of years no actions were taken by either party to improve the relationship.

1997-1999 – One employee remained with CRE until they hired another.

Summer of 1999 – CRE hires co-managers and Al-Pac brings on board a native liaison. Work was initiated to revitalize the existing contract with a focus to build a stronger relationship.

Nov. 1999 – Chief Bernice Cree and Al-Pac's Vice President and General Manager, Bill Hunter meet to ensure success of CRE. Direction has been given to Al-Pac's Woodland Operations to work directly with CRE's managers to work towards strengthening the working agreement.

Jan. 2000 – CRE and Al-Pac ensure positive growth by CRE procuring funds to send employees to forestry school. Al-Pac will provide hands-on-learning experience when and where it can for these people, while expanding contractual employment to CRE.

Jan. 2000 – Al-Pac's Clearwater Team has invited CRE reps to attend their team meetings for the purposes of providing feedback and assist in planning operations.

May 2000 – Work to commence May, 2000 and by the end of 2000 CRE's goal is to achieve four new positions while working with Al-Pac.

Metis Settlement of Kikino

General Delivery
Kikino, AB T0A 2C0

Kikino/Al-Pac History

- **1990 – Discussions initiated to support one another.**
  Pilot Trials begin to identify which forestry practice will be used—horse or mechanical logging. Each practice was initiated at the same time. At the close of the season the results were assessed. The results were that larger harvest quantities were realized with machinery adding to profits but the community did not like the physical and visual effects of contemporary harvesting methods.

- Harvesting quantities using horse drawn methods were satisfactory and did not disturb the ecology as did machinery. Profits were marginal but sustainable for those people employed.
- Kikino reach conclusion on which method of harvesting to use for their community—Horse Logging.
- Arrangements made with Al-Pac to care for lands designated as Crown. Metis private lands to be handled by Kikino Administration.
- Metis procure funds to train individuals in harvesting and timber management for their lands.
- A decision was made by the Metis to use machinery for construction of roads.

Kikino/Al-Pac Today

- Of importance was true land stewardship by utilizing a mixture of heavy machinery and horse logging.
- Harvesting contracts are tendered and bids submitted by local contractors.
- Four local Metis contractors are presently being used and were chosen by the community.
- All deciduous fibre is sold to Al-Pac while pine goes to local mills.

Kikino/Al-Pac Future

- Kikino expects to increase their harvest quota and number of trucks hauling.
- Training monies to be procured to provide additional employment opportunities to their people.
- Al-Pac expects to expand their relationship with Kikino and will review purposes for capacity development.
- Kikino and Al-Pac have expressed their desire to strengthen not only their working relation but also their social ties.

Bigstone Forestry Inc. (BFI) owned and operated by the Bigstone Cree

Bigstone Cree
General Delivery
Wabasca, AB T0G 2K0
Contact: Chief Mel Beaver

Bigstone/Al-Pac History

- 1989 – Bigstone and Al-Pac initiate cooperative discussions
- 1995 – Memorandum of Understanding (MOU) signed outlining commitments to meet the objectives outlined during early discussions of 1989
- 1995-98 – Forestry business ventures initiated – some succeed; some fail
- 1999 – Bigstone and Al-Pac revisit forestry initiatives – resulting in the creation of a forest products company, Bigstone Forestry Inc.

Bigstone Forestry Industries – Key Objectives

- to create and achieve sustainable methods of harvesting to provide income and employment to residents of the communities for decades to come.
- to fulfill the moral and practical commitments of the 1995 MOU
- to operate the company as an independent business with a Board of Directors separate from the Bigstone Band

Bigstone Forestry Board of Directors

- Bigstone Cree – 3 nominees
- Al-Pac – 3 nominees
- Weyerhaeuser – 1 nominee
- Chairperson – 1 nominee

Formation of Bigstone Forestry Inc.

December 1999 – Development of Business Plan

- 3rd project participant (Weyerhaeuser)
- Secured independent legal council to craft agreements that reflect unique nature of business and participants

March 1999 – First Draft of Business Plan
detailing

- objectives
- equipment needs
- recruiting goals and legal agreements

Formation of Bigstone Forestry Inc.

- April 1999 – Search for financial resources
- June 1999 – INAC grants
- July 1999 – Alberta Treasury Branch agrees to facilitate loan in equity
- Alberta Treasury Branch values the synergy between BFI and Al-Pac
- Al-Pac and Weyerhaeuser secure contracts for BFI
- January 2000 – Crew now working to deliver 200,000 m3 annually.
  - 1st year – 10 local community members employed
  - 2nd year – purchase additional equipment, hire three additional workers
  - 3rd year – train local community member to manage business
- 2003 – Al-Pac phases out as a partner and manager over the next five years

ABCoR Forest Industries Inc.

Box 8001
Boyle, Alberta T0A 0M0
Contact: Edward Lefebvre, General Manager

ABCoR is a unique company involving communities, business, and individuals, with 70% Aboriginal ownership. This company is also unique in that it brings together Cree, Chipewyan, Metis, and non-Aboriginal investors to participate in an economically viable project. The proponents for this project are Bigstone Cree Nation, Chipewyan Prairie First Nation, two individuals, the Metis Nation of Alberta and Sauder Industries. ABCoR has the necessary forestry, business, and marketing experience/expertise to develop and manage a project of this magnitude and caliber. ABCoR is proposing to:

- build a three mill $60 million value-added manufacturing business.
- construct the three facilities that would create a further 120 person years of construction employment
- have annual expenditures of $35 million including $11 million in salaries
- create 265 direct and 88 full-time contract positions largely in semi-isolated communities reducing high levels of unemployment and under-employment
- create 50 new jobs in Calgary
- require a Grade 9 entry level with a commitment to obtain a GED
- create almost three times the number of jobs per cubic metre of wood than will other products. This project will create an enormous benefit to local northern communities in the Province of Alberta with only a small volume of wood.

ABCoR will:

- construct sawmill/chipping facilities at Wabasca and Janvier Aboriginal communities, to produce rough green lumber, pulp chips, and hog fuel
- construct a remanufacturing facility at Prosvita to produce over 57 million board feet of finger-jointed millwork for the major customer
- to manage on an ecosystem management basis recognising that forest fires have been the main natural disturbance process in the boreal forest and harvest practices which attempt to approximate natural disturbances are more sustainable
- retain the services of Al-Pac to manage ABCoR's timber through a management agreement
- enter into a long-term sales/marketing agreement with Sauder Industries
- seek Forest Stewardship Council (FSC) certification as it is recognized and accepted by retailers and environmental groups
- create a sound environmental project
- create a project that uses all of its waste to create steam and power
- address potential environmental issues related to emissions into air, water, and soil
- invest $0.75/m3/year into ecosystem management research. This money would be used to fund research projects through universities and other research organizations to further the understanding of the ecology and natural disturbance regime in the northern boreal forest.

Al-Pac's Millwright Apprenticeship Program

The inception of this program came about from Al-Pac's Vice President and General Manager, Bill Hunter. He provided direction to the Aboriginal Resource Team and the Pulp Business Unit Leader to initiate an apprenticeship program and get it up and running by the summer of 1999. The program is a rotating training program where three Aboriginal individuals, selected from Aboriginal communities affected by the FMA, are ensured training within the millwright trade.

There has been discussion regarding the amount of time and money invested in such training when those individuals may find employment elsewhere when their training is complete. The bottom-line, however, is that Al-Pac is focused on increasing capacity in Aboriginal communities through the development of Aboriginal people. Empowerment after all is a form of capacity development building. Management sees the need to assist Aboriginal community members to make choices as to where and how their families will live.

Aboriginal Education Partnership Program

Continuing with achieving Aboriginal objectives Al-Pac initiated the Education Program to provide financial support to those seeking a formal post-secondary education. Recipients must live in and around the FMA. The scholarship covers tuition until completion of studies or up to five years. To date three students have been awarded a scholarship with a total value of approximately $10,000.

In line with the Education Program, Al-Pac has a Summer Student Program. Students are assigned a work experience associated with their field of study and education level. This program has employed and provided experience for five Aboriginal students.

Conclusion

Al-Pac remains committed to building stronger relations with Aboriginal peoples. Several examples have illustrated positive growth. As a corporation Al-Pac is striving to build mechanisms to better understand cultural relations and differences. A healthy forest accounts for the total diversity within its domain, the natural process of the entire ecosystem. This includes humans. Al-Pac recognizes that within cultural diversity a healthy relationship can grow. The myriad of interactions are complex, but with vision and a challenging spirit, people within northeastern Alberta are striving towards ecosystem and integrated management based on a foundation of respect, sharing, and patience.

AFN/INAC Joint Initiative for Policy Development (Lands and Trust Services)

Don Kohoko, Assembly of First Nations

and Chris Nicols, Indian and Northern Affairs Canada Joint Initiative (LTS) Directorate

Mission Statement

To facilitate First Nations in directing change to LTS policies.

What is the Joint Initiative? (Goal)

The AFN/INAC Joint Initiative on LTS policies is a working relationship that aims to initiate positive change.

How will the Joint Initiative help First Nations?

First Nations can use the Joint Initiative to strengthen capacities and create opportunities to address their own priorities.

What is the Initiative all about?

First Nations taking more control over activities in INAC's Lands and Trust Services sector

This is First Nation driven – First Nations identify their goals and what needs to be done in order to get there

Once priorities are identified, human and technical resources are in place, and all the needs are met, First Nations can take control over those areas in a real, sustainable way

What are the areas in the LTS Sector?

- elections
- maintenance of Indian Register and lists
- issuance of certificates of Indian status
- transfer of control of membership
- new First Nations
- by-laws
- environment issues Inventory and Remediation Plan
- Indian Environmental Assistance Fund
- environmental protection
- environmental assessment
- natural resources – forestry
- natural resources – minerals
- Resource Access Negotiations Program
- First Nations Oil and Gas Management
- land management
- surveys
- land registration
- lands research and title clarification
- lands and trust services training
- Indian moneys
- estates

These business lines have been grouped into these subject areas:

- elections and leadership selection
- membership and citizenship
- additions to reserve lands
- law-making
- environmental protection
- natural resources
- lands management
- monies
- wills and estates

Three necessary special subject areas

- fiduciary relationship
- capacity requirements and costs
- implementation options

How does it work?

- First Nations identify their goals in each of the LTS areas
- then, First Nations identify what they need to do in order to reach those goals: capacity building, technical resources, new arrangements with the government, etc.

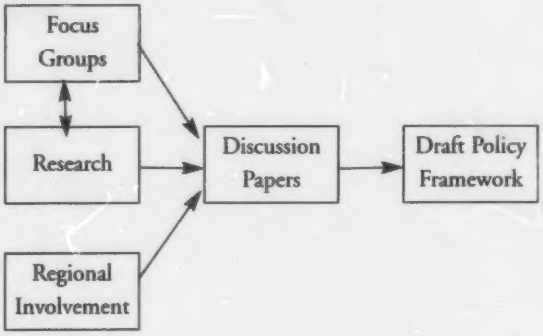
Learning from History

- previous attempts at changing 'the system':
    - the 1987 LRT Review
    - the *Indian Act* Alternatives exercise in the 1990s
    - Bill C-79 – *Indian Act Optional Modification Act*
- all failed – First Nations had no input into the process
- in the Joint Initiative, First Nations decide where they want change and what those changes should be

Background

- INAC approached AFN in 1997 about creating a First Nation process to meet these goals
- AFN developed a process where First Nations are in the driver's seat
- there are three major channels for information

Sources for Policy Development



1. Regional Involvement

- to hear from as many First Nations people as possible about regional and community concerns
- each region free to design its own process to ensure social, economic, and cultural diversity is addressed
- INAC provided resources to AFN regions to:
    - provide information about the Initiative
    - seek input as to priorities, issues particular to the region

Regional Involvement Update

First Round (1998/1999)

- activity in every region
- different schedules and timeframes – interim reports drafted
- most included series of meetings with AFN/INAC joint presentation to begin followed by open discussion
- clear statement that the process needs to continue and for full involvement

Second Round (1999/2000)

- build on activities from First Round
- more meetings to ensure full involvement
- regional reports identifying regional concerns and priorities to be submitted at end of second round

2. Focus Groups

- examine issues in specific LTS subject areas: interaction and brainstorming, open and honest atmosphere
- every region invited to send participants: community members, Elders, Chiefs and Councillors, officials from INAC and other departments, representatives from other Aboriginal organizations
- participants identify issues, problems, and obstacles in taking control of area; identify regional concerns; and explore alternatives and solutions
- results of focus groups incorporated into the discussion papers

Focus Groups: Work to Date

- focus groups have looked at membership, elections, additions to reserves, lands and natural resources, fiduciary, wills and estates, lands management, and Indian monies
- upcoming focus groups (tentative)
  - fiduciary issues – March 2000
  - environment – March 2000
  - law-making – February 2000

3. Research Component

- directed and guided by the Chiefs and Joint Technical Committees
- provide history for each subject area
- inform the policy-making process and respond to the focus groups and regional involvement
- ensure that all relevant issues are brought forward

Research Update:

Additions to Reserves	Complete
Capacity and Costing	Update on activities received
Elections:.	Complete
Environment:	Complete
Fiduciary obligations:	Complete
Implementation:	Complete
Indian Monies:	Complete
Lands:	Background papers complete
Law Making:	Complete
Membership:	Background complete
Natural Resources:	Background complete
Wills and Estates:	Background complete

Guiding Principles

The Initiative must be First Nation driven and will:

- ensure the Crown's fiduciary duties and responsibilities to First Nations are maintained
- honour on-going self-government or treaty negotiations
- uphold Aboriginal title, Aboriginal rights, and Treaty rights
- ensure that federal responsibilities are not off-loaded, and provide adequate resources to First Nation initiatives
- enhance and develop skills, and the professional capacities of First Nations
- respect and be responsive to the conditions of all First Nations, locally, regionally and nationally
- support and promote practical progress toward self-government
- enhance the governing capacity of First Nations

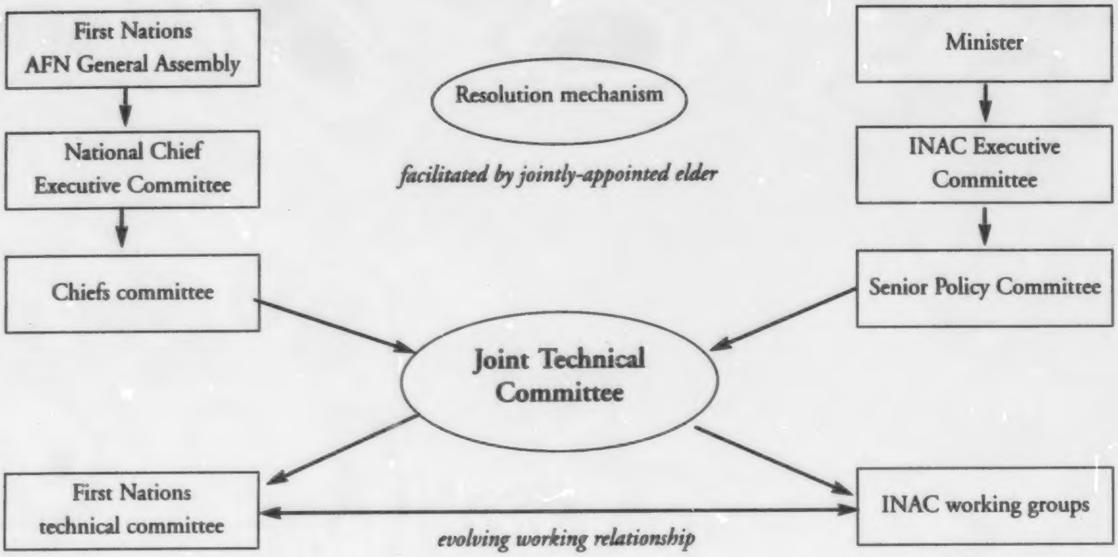
What Happens Next?

- another round of regional involvement is beginning in all regions
- three more focus groups planned between January and March 2000
- ongoing research and review of information

What Happens Once All the Work is Complete?

- discussion papers prepared for each subject area, outlining options for change (changes may be operational, administrative, policy, etc.)
- options not requiring consensus will be implemented immediately, e.g. improvements to operations
- any options requiring consensus from First Nations presented to national gathering
- National Gathering in June 2000
  - First Nations will review options and provide direction in each area

Joint Initiative Process



Workshop I

Managing Reserve Forests or Other Small Land Holdings–The Management Plan and GIS

Forest Management Planning

Gary Ardron, R.P.F.
Shelterwood Forest Management Ltd.

Why is a Forest Management Plan Necessary?

- Forest management is a long term integrated process and any action carried out today without adequate planning can impact future uses or values of the land.
- It focuses the community to identify the benefits or goals they desire from the timber and non-timber resources found on their forest lands.
- It helps the community identify alternative ways to achieve these goals or benefits and to select the most effective way of achieving them.
- It requires the community to identify management activities to achieve the goals and to efficiently prepare for these activities to avoid unnecessary costs and delays.
- A Management Plan is often required to obtain funding or financing to implement or support management activities.
- Management Plans are required to obtain Forest Certification.

What is a Forest Management Plan?

A Forest Management Plan is a written document that clearly states the long-term goals and objectives that a First Nation community has for its forest land, describes the forest resources on the land (both timber and non-timber resources), and acts as a blueprint for short term and long term development activities that will assist the community in achieving these goals and objectives. The specific elements of a Forest Management Plan typically include:

- a statement of authority or who the plan is being developed for
- a general description of the forest land base
- a brief description of any previous or current forest management history
- a statement of the short- and long-term goals and management objectives developed by the community for the timber and non-timber forest resources
- a description, summary, and analysis of timber and non-timber resource inventories (Resource Inventory Report)
- identification and discussion of the annual allowable cut (AAC)
- identification, evaluation, and selection of development options that help achieve your management objectives
- description of short term development activities to implement the preferred option (Five Year Development Plan)
- identification of any monitoring programs and timelines for a review and update of the Management Plan
- maps

Statement of Authority

Describes who the plan is being prepared for:

- Individual First Nation
- Tribal Council
- First Nation Association
- Development Corporation

Land Description

Include a brief discussion on:

- ownership
- location
- size
- general location map

Management History

Includes a brief discussion on:

- previous management plans
- current resource management
- harvesting history
- fire history
- commercial/subsistence use of both timber and non-timber resources

Management Goals and Objectives

- both short and long-term in nature
- are community based and are developed through consultation and discussion with Council and community members
- should include the integration of traditional and contemporary values and uses of the resources
- include objectives for significant environmental, social and economic values
- be obtainable and based on realistic expectations

Resource Inventory Report

1. Timber Resource

Methodology

- Standards and Specifications
- Personnel
- Stratification
- Sampling and Specifications
- Mapping

Results

- Timber volumes by species, age class, productivity
- Forest Cover Types (Summary tables and maps)

2. Other Resource Values

- Fisheries (stream classification, species)
- Wildlife populations and habitats
- Water resources
- Recreation trails
- Trap lines
- Cultural, archaeological, and traditional use sites
- Non-timber forest resources (mushrooms, berries, etc.

Annual Allowable Cut (AAC)

This section includes a discussion of the procedures and the calculations to determine an AAC for the planning area. The AAC is the average volume of wood that can be harvested annually on a sustainable basis from the management planning area. In general terms, it is equal to the amount of new growth produced by the net forest area each year minus future estimated losses due to insects, disease, and fire. The net forest area usually excludes:

- non productive areas (swamps, muskegs, grasslands, agriculture lands, residences etc.)
- in-operable areas due to slope, rock outcrops, wetlands
- reserves and protected areas (cultural sites, riparian zones, wildlife habitat, recreational sites etc.)
- permanent roads and landings

Development Options

This section will describe the short-term (5-10 years) development options that will best achieve the overall goals and management objectives of the community.

To assist in this exercise it is often beneficial to divide the planning area into units that are similar in species, age, stocking, site characteristics, existing use activities and other resource values. Areas within these units can often be managed for similar objectives and products.

Specific development and management objectives are identified for each of these units.

Considering the individual management unit objectives, several development alternatives are assessed to determine which option best meets the overall goals and management objectives of the community. This analysis must consider the financial and logistical consideration of each alternative.

The development option decided upon will set the stage for the specific management activities and their scheduling.

Development Plan

This section identifies the actions on the ground that are required over the next five years to implement the option decided upon in the previous section.

A Development Plan describes:

- **what will be done** – road construction; harvesting (timber and non-timber forest products); reforestation; spacing; pruning; fertilizing; recreational developments, fisheries or wildlife habitat improvements, etc.
- **where it will be done** – specific areas are identified
- **when it will be done** – year, season
- **how it will be done** – harvesting and silviculture systems, equipment to be used, reforestation methods
- **who will do it** – community members, training required, contractors

Estimated costs to complete each of these activities should also be included to ensure that money is earmarked on an annual basis for the implementation of the plan.

Implementation, Monitoring and Review

Implementation of the plan is critical to achieve the long term goals of the community. It is important that someone in the community (councillor, forestry officer, forest company manager) assumes or is given the responsibility and authority for its implementation.

A management plan should be reviewed periodically to ensure that it is being followed and that the management activities are achieving the intended results. Significant changes to your forests (fire, disease, insects) or changes in the community's long-term goals and management objectives will require an update to your plan. The plan should be reviewed annually and updated at least every five years. The forest development section of the plan should be reviewed on an ongoing basis and updated annually.

Costs to Complete a Management Plan

Initial management plan costs are relatively expensive due to the time and manpower requirements to complete the field components of the forest inventories and the time for data compilation and mapping.

Costs ranged from $15,000 to 75,000 for the last round of management plans under the previous FRDA. This was mostly dependent upon the remoteness of the community Reserves and the total area to be inventoried.

Updates should be significantly less as the bulk of the work has already been completed.

How to go about Developing a Plan

The ideal situation would be to have a trained professional forester or forest technician working directly for your community or Tribal Council. This would have several distinct advantages, including:

- the opportunity to have a qualified individual on-site that could direct the development of the plan(s)
- ensure ongoing consultation within the community when developing the community goals and management objectives
- provide on-site training of community members in inventory, data compilation, mapping, and other phases of plan implementation
- help ensure that the plan and management activities are implemented, monitored, reviewed and updated as necessary.

The second option, which is the one used most often by First Nation communities, is to bring in an outside forestry consultant to complete all phases of the inventory and management plan development. Should you choose this option, there are several points to consider in selecting a consultant:

- Ensure that the consultant and staff have the qualifications and experience to complete all phases of the project. Previous experience in working with First Nations would be preferable.

- The use of a local consultant would be preferred as they are familiar with the forestry practices and industry in the area.
- Ensure that there is sufficient time in the contract for adequate communication with the Council and community members to develop the community goals and management objectives for the forest land base.
- Training and employment of community members in all phases of the project should be a key component of the project.
- Total cost is not the only consideration in selecting a consultant.

Keys to a Successful Forest Management Plan

- community support for the goals and management objectives
- integration of traditional and contemporary uses and values
- based on sound timber and non-timber inventory information
- having someone responsible for implementation, monitoring and updating the plan

Introduction to Forest Resource Inventory

Derek Acres, Gerry Becker, Russell Bell, Robert Frank and James Matthewson
Government of Manitoba, Manitoba Conservation Forestry Branch

Steps to Complete a FRI

- land cover classification
- land-use classification
- aerial photography
- base mapping
- photointerpretation
- field surveys
- Geographic Information System
- outputs

Land Cover Classification

- vegetated treed – softwood, hardwood, mixedwood
    - wetland
    - upland
- vegetated non-treed – shrub, ferns, grasses, moss, lichens
    - wetland
    - upland
    - alpine
- non-vegetated land
    - bedrock, river sediments, beach, burned area, roads, railroads, moraine
- non-vegetated water
    - lakes, reservoirs, rivers, streams

Land Use Classification

- resource use
    - industrial, forestry, agriculture, recreation
- protected areas
    - parks, ecological reserves, wilderness areas, conservation areas
- First Nation use
- infrastructure
    - utilities, transportation, settlement areas

Aerial Photography

- tender to approved contractors
- flight map
- 1:15000 aerial photography
    - black and white, BandW Infrared
    - colour Infrared
- contract compliance
    - overlap, complete lines, cloud, tone, resolution, annotation
- phototyping to classification/standards

Base Mapping

- ortho-photography
    - 1:60000 aerial photography
    - ground control, rectification
    - digital ortho-photo tile
    - UTM grid vs TWP/RGE
    - 1:15000 base map
- transfer typed photographs to ortho-photo
- digitize polygons using GIS
- numbering of polygons

Photointerpretation

- polygon ID
- species
    - - nearest 10%, JP8 BS1 TA1
- moisture class
- land form
    - limestone or igneous outcrop, sand, steep slopes, well and poorly drained flats
- height
    - nearest one metre
- Crown closure
    - 10% classes
- year of origin
    - i.e. 1920, 80 years old in 2000.
- vegetation type
    - forest ecosystem classification (FEC)

Field Surveys

- temporary sample plots established
  - number of plots
- prism plots
  - BAF 2M prism
  - measure all trees
- age tree (year of origin)
  - increment borer
  - stump height
- species
- height
  - clinometer
  - nearest 0.5 metres
- diameter breast height
  - diameter tape
  - 1.3 metres above ground
  - nearest 0.1 centimetre
- identify ground vegetation
- determine FEC type
- identify soil material/depth
- regeneration occurrence/stocking
- moisture
- average age, diameter, height
- permanent sample plots
  - establish for growth and yield
  - remeasure every five years
- compilation of temporary plots
  - tree volume equations
- stand stock volume tables
  - gross merchantable
  - net merchantable
- yield curves

Geographic Information System

- UTM coordinate data
- land-use information
- base maps
- digitizing
  - forest resource inventory
  - forest fire loss, harvesting
  - other resource layers
- update FRI

Outputs

- area summaries
- volume summaries
- maps
- GIS analysis
- annual allowable cut calculations
  - wood supply models
- reports

Points to Ponder

- who is responsible for the inventory?
- what is the cost?
- where will the information be stored?
- when is the inventory required?
- why do I need to collect this information?
- check what is already available.

Introduction to GIS

Derek Acres
Government of Manitoba, Manitoba Conservation

Presentation Overview

- What is GIS?
- What is GIS used for?
- Demonstration using GIS data
- GIS products
- Getting started (using GIS)

What is GIS?

- Geographic Information System (GIS) computer hardware, software, geographic data and personnel designed to capture, store, update, manipulate, analyze and display all forms of geographically referenced data.
  Definition from the book Understanding GIS: The Arc/Info method, Version 6, Environmental Systems Research Institute
- computerized mapping
  - allows for visualization and analysis of data in the form of a map
- Smart Map
  - features in the map know where they belong in relation to the Earth
  - features in the map can store characteristics about itself

GIS Feature Classes

Line

- represent features without an area but have length associated with it.
  - narrow streams
  - trails
  - contour lines

Line Features

Point

- represent features without an area or a length associated with it
  - lightning strikes
  - nesting sites
  - trappers' cabins

Polygon

- represent features that have area associated with it
  - forest stands
  - moose calving sites
  - lakes

Layering Themes

- overlays the various themes to see how the data integrate
- gives a visualization of how the data relate to each other geographically
- allows for further analysis based on the geographical location of the data

Line Features

Point Features

Polygon Feature

Layering a Point, Line and polygon theme for display

What is GIS used for?

- representing geographical data for
    - planning
    - tracking changes
    - identifying sites
    - area calculations
    - modeling
    - proximity analysis
    - producing maps
    - much more
- GIS Software Products
    - E.S.R.I. Arcview, Arc/Info
    - MapInfo Professional
    - AutoCAD Map Autodesk World
    - HER Mapper
    - SmallWorld
    - Intergraph GeoMedia Professional
    - PCI Geomatics PANMAP
    - Many more

Getting Started with GIS (Costs)

- personal Computer ($4,000)
    - latest model Pentium 3
    - high resolution monitor, good graphics card
    - color printer
- software ($2,000)
    - Arcview, MapInfo Pro
- training ($1,000)
- staff (varies)

Forestry Operations on Opaskwayak Cree Nation (OCN)

(Prior to and following the procurement and implementation of a Forest Management Plan)

Jake R. Dyck
Forest Consultant

Forest harvesting did take place in OCN'S forests prior to the beginning of federally funded Forestry Programs. Forests were originally cut down to clear land, to build homes, and to provide fuel for heating and cooking – in other words, to provide some of the basic necessities of life. Fuel wood harvesting still occurs today.

More recently, band members have harvested forests for a source of income. The harvesting practices used most frequently were selective, and small patch clear cutting. Clear cutting in hardwood and mixedwood stands has resulted in an uneven aged stand structure, irregular and poor regeneration and abundant shrub layers. Selective harvesting of the softwood component leaves a semi-open stand of mature and decadent poplar trees. The silvicultural conditions required for the re-establishment of either a healthy spruce or poplar forest are not created by these types of harvesting. The sites selected for harvesting were based on the individual's knowledge of the forests on the reserve, probably due to hunting and fishing expeditions.

The first federally funded forestry program was **the Canada-Manitoba Forest Renewal Agreement 1984- 89.** OCN did not benefit from this program.

The second program was **the Canada-Manitoba Partnership Agreement in Forestry 1991 – 1996.** The main objectives under a sub-program called "Management of Federal Crown Lands" was to provide funding for forest management plans, forestry operations such as site preparation prior to planting, the purchase and planting of seedlings, and forest management training.

A Forest Inventory and Management Plan was prepared for OCN by the Swampy Cree Tribal Council through Swampy Cree Holdings and Synthen Resources in 1991-92. The major elements of this document are the maps delineating the forest stands, and the forest inventory tables listing the species composition, cutting class, height class, site class, volumes in cubic meters and the area for each of the stands. **This document provides all the necessary information required by OCN to manage their forests.** It also suggested stands that should be harvested, and reforested for the 5 year period, 1991 to 1996. This management plan was updated in 1995 by Synthen Resources. The Management plan provided information on small reserves that had not been included in the 1992 version. The format of the volume tables was revised, but the information remains unchanged. The 1995 plan also included portions of the Provincial Forest Inventory Manual that describe the forest inventory codes used in the Management Plan.

In 1992 and 1993, a total of 310,000 seedlings were planted at 2 meter spacing on 3 OCN Reserves. These were Fisher Island I.R. 21F (5 km north-west of The Pas), Salt Channel I.R. 27D (near the Saskatchewan border), and Carrot River 27A, (approximately 14 km west of the Manitoba border) in Saskatchewan. The seedlings were grown at the Tayo-Westaywin Greenhouses on the Dakota Plains Reserve near Portage la Prairie, Manitoba. The seedlings were grown in Can-Am 60 seedling trays. Seeding occurred in the first week of January, followed by a four-month growing period. The seedlings were shipped and planted in May.

The sites selected for planting were recommended in the Forest Management Plan. Site preparation prior to planting at Fisher Island and Salt Channel consisted of winter shearblading in alternate strips. The bladed areas varied from 4 to 12 meters in width while the variation in the windrowed debris strips ranged from 3.5 to 13 meters. Additional 'Brackie' scarification was done to create mineral soil exposed sites for planting. The 1992 plantation on the north side of the road on Fisher Island did not receive this additional treatment. The creation of a mineral soil spot for planting was achieved by using a planting shovel or by boot screefing. At Carrot River, the planting area was a rehabilitated borrow pit. Site preparation was not required as mineral soil was readily available between and on the edges of the borrow pits. The seedlings were not evenly distributed over this area and were intended only to cover the bare mineral soil that was devoid of any vegetative cover. Funding for growing seedlings, site preparation, and planting was provided by the **Canada-Manitoba Partnership Agreement in Forestry.** Portions of the planting costs in 1993 were paid by **Tree Plan Canada.**

In May, 1999 a regeneration survey (funded by Indian and Northern Affairs Canada) was carried out on the three planted areas to determine the success of the plantations and to determine the abundance of natural regeneration including trembling aspen, balsam poplar, and white birch.

The **Fisher Island** plantation is well stocked to white spruce, 72% and to hardwoods 91%. White spruce density was 1,600 per hectare while hardwood stems number 7,779 per hectare. The white spruce, a shade tolerant species is healthy and growing well under the hardwood canopy on the northern and central part of the plantation. The white spruce has been severely browsed by the snowshoe hare on the southern part to the plantation which is beside a willow swamp – good hare habitat. Where there is a good cover of hardwood and shrub species, the browsing is less severe. Observations in November 1999 indicate that the spruce seedlings have fully recovered from the browsing and no new browse was noted. Some browsing is expected to occur in the winter of 1999–2000.

At **Salt Channel** the southern half of the plantation had standing water within the bladed strips causing the white spruce plantation to be a complete failure. Replanting the area is not recommended. The northern half of the plantation is under-stocked to white spruce (28% with 435 stems per ha) but well stocked to hardwoods (76% and 5864 stems per ha).The majority of the planted white spruce seedlings and hardwood regeneration grow on the northern part of the plantation.

At **Carrot River** the bottom of the borrow pits were covered with water and cattails. The slopes of the borrow pits are mostly covered by hardwood regeneration and small amounts of white spruce. White spruce stocking on the area is only 4% while hardwood stocking is 74%; density was 130 and 10,333 stems per hectare respectively. It should be noted that the white spruce stocking is very low because only a small portion of the area was suitable for planting white spruce. Where planting did occur the survival is greater than 90%.

The OCN white spruce plantations are growing rapidly and look very sturdy and healthy. The mean heights of the white spruce seedlings at Fisher Island, Salt Channel and Carrot River are 0.6m, 0.7m, and 0.5m respectively. For the near future, the next 20 years or so, the only recommendation is to monitor or examine the plantations every 5 years or so, or when unforeseen catastrophes, such as fires, severe storms, insect infestations, and excessively high hare populations occur. White spruce is shade tolerant and grows well under a canopy of hardwoods. Hardwoods provide protection in severe hail or windstorms and are so dense that animals do not use planted corridors for trails. They also reduce the severity of late spring frosts and spruce specific insect infestations. Future inspections should determine if the planted white spruce seedlings would benefit from the removal of trembling aspen and balsam poplar regeneration.

Funding from the First Nation Forestry Program is gratefully acknowledged for the preparation of 1999 update of the forest inventory and management plan. This update is based on 1995 provincial aerial photography. The scale of these photographs is 1:15,840. The photos were purchased from the provincial Department of Natural Resources, and the electronic ArcView compatible information on CD Rom disks was purchased from Linnet Geomatics. Township FRI maps and the accompanying legends were purchased from the provincial Forestry Branch. The volume tables were prepared by Jake Dyck using Forestry Branch stand tables.

Stand assessments following harvesting were made at Young's Point I.R.21A, 5 kilometers south of The Pas, and at Stoney Point on the shores of Clearwater Lake approximately 60 km northeast of The Pas. Harvesting was completed by the permit holders. The assessments indicated the need for monitoring the harvest while harvesting was in progress

The boundary of forest stands scheduled for harvesting was ribboned at Rocky Lake, I.R.21L. Rocky Lake is approximately 40 miles north of the Pas and is accessible only by water.

Aerial photography of Carrot River was taken in July 1999 in order to prepare new FRI data and maps. The photography was done in conjunction with Tolko's July aerial photography projects. The work was coordinated by Ms. Fiona Donald, Inventory Forester at Tolko Inc. Her efforts in procuring these photographs is gratefully acknowledged and appreciated. Photo interpretation and volume table preparation were done by personnel from the Province of Manitoba Forestry Branch. Map digitization and electronic data preparation were done by Linnet Geomatics. Due to recent forest harvesting, aerial photography was also taken of the Big Eddy and Young's Point Reserves. Maps, stand volume tables, and GIS information of these areas are being updated by Ms. Heather Lafontaine, GIS Specialist at Tolko Inc. Her work is gratefully acknowledged.

Forest Management Planning as Part of Land Use Management Planning

The Sagkeeng First Nation Experience

John Dyck
Plus4 Consulting

Presentation Agenda

Introduction

- session goals and objectives
- overview and findings of the Sagkeeng First Nation recent forest management planning experience
- Why are we encountering land use and land use practices conflicts?
- What can we do to reduce or eliminate these conflicts?
- How do sound land use management and practices enable sustainable development?

Introduction

During recent forest management data collection, review, and planning exercises on Sagkeeng First Nation (SFN) reserve lands, it became clear that comprehensive and meaningful planning was difficult, if not impossible to do. In evaluating past forestry investments many were found damaged while others were under stress from competition and also exhibiting investment losses. The challenge remains to develop meaningful management plans that can be financially justified and meet the goals and objectives of the SFN people.

It became apparent that forest management goals and objectives were not clearly defined. Furthermore, it also became apparent that although a land use plan had been developed, it had not been implemented and was thought to not adequately reflect the interests of the SFN people. In view of this, it was appropriate to 'back up a step', evaluate the situation, and consider planning priorities for proper land use and resource management.

- to outline the order of planning activities
- to recognize conflicting and often damaging land use practices
- to learn how to control and manage potentially damaging land use practices

Goals

1. To set land use management planning and forest management planning in perspectives relative to each other and in order of occurrence. Which one comes first and why?
2. To learn to recognize, manage and control conflicting land use practices thereby minimizing economic losses and environmental negative impacts.
3. To show how land use plans and "activity plans" fit into the equation of sustainable development.

The Sagkeeng First Nation Experience

- in 1999, the Manitoba Model Forest (MBMF) and Sagkeeng First Nation (SFN) entered into a stakeholder agreement to cooperatively manage forest resources on SFN reserve lands
- previous forest management (FM) initiatives based on 1990-91 inventory and 1992-96 Forest Renewal and Implementation Plan had been lost or were at risk of being lost

Objectives

- to provide an overview of the SFN forest management planning experience and the findings
- to show participants how forest management planning (FMP) fits into land use planning (LUP)
- to identify the importance and need for various levels of planning

  - GIS in disrepair
  - Database lost
  - No documented records of forest management activities that had been implemented between 1992-95
- SFN recognized that potential exists for economic development in managing the reserves' forest resources
- MBMF and SFN chief and council decided to re-start forest management activities; these included:
  - Updating FRI on reserve lands
  - Acquiring and installing a new PC driven GIS and supporting software
  - Obtaining FRI database and associated records, including FRI updates
  - Developing a FMP
  - Prepare funding proposals to support FMP activities
- to conduct the above activities, SFN and MBMF hired the following:
  - Technical Forestry Services – to provide GIS services
  - Plus4 Consulting – to provide forestry expertise
  - Courtander Enterprises Ltd. – local forestry company to provide local expertise and logistical support

FRI Updating consisted of:

- 1992-96 Forest Renewal and Implementation plan and available records review
- field inspection of silviculture activity sites and timber harvest sites
  - These would also assist in FMP development

Findings

- no follow-up activities had taken place since first forest renewal investment
- substantial loss of initial investment due to factors such as vegetative competition, flooding, animal browsing, and damaging (conflicting) land use practices (burning, grazing, fence line clearing and construction, indiscriminate operation of heavy equipment, etc.,)
- loss of initial investment due to conflicting land uses (plantation used as pasture, private property development, urban development; i.e. housing, dump, etc.)

Why are we encountering these land use and land use practices conflicts?

Land Use Conflicts

These typically are seen where forestry lands (and in the SFN experience, forestry investments – plantations) are converted to other land uses (e.g., pasture, urban development, garbage dump, etc.) at the cost or loss of forestry investments.

- dumps inherently bring with them a very high fire risk jeopardizing investment.

Why is this occurring?

The problem can be traced to improper or insufficient planning, or improper implementation of plans.

> e.g., A plantation is established and a few years later converted to another use (pasture). The subsequent land use is detrimental to the plantation (loss of investment).

To avoid these types of scenarios we must learn to prioritize land use and forest management planning and perform them in proper sequence. LU planning deals with taking inventory of all of the resource values (land, soil, water, forests, etc.) and developing a long-term (100 years +) plan that designates land use, also known as zoning, for certain activities (i.e., urban development, tourism, industrial development, agriculture, forestry, conservation, etc.). Overlap of land uses may occur on any one specific parcel of land (e.g., conservation, tourism, non-timber forestry, etc.) depending on management objectives. The LUP can be seen as the umbrella under which all of the activities are organized and prioritized (see Fig. 1).

A LUP must be:

- grounded in solid long-term goals of the community
- must be representative of community values and objectives

  - **if not**, then it will not be long before it is in conflict and **not** serve its purpose

Commitment to LU Planning

- the community (people) must understand the importance of the process and commit to it
- if LUP values are properly understood, incorporated in the planning process, and properly implemented, then the process will survive the test of time
- a properly developed LUP must be implemented and followed by all concerned (from the authority to the individual)
- implementation involves LU zoning
- geographical identification of what activities are permitted where
- there can be overlap of activities; i.e., forestry, wildlife, tourism, conservation, etc.
  - this should be encouraged to maximize land use
- where this process is followed, implemented, and adhered to, there is an inherent level of protection for activity investments such as forestry, tourism, etc.
- the security/protection is necessary because forest management is a long-term affair, (i.e. cannot invest in forestry today and convert to agriculture next year without 100% loss)

Where LU planning is complete and lands have been clearly identified for various activities, then, and only then, should activity plans be formulated. Forestry, along with tourism, wildlife, agriculture, etc. is a land use activity which requires an activity plan (usually referred to as a forest management plan) to manage those areas designated for forest management.

The recognition and designation of multiple activities on a land base may influence any individual activity plan. This provides for land use optimization in comprehensive and integrated management planning. The recognition of multiple activities that require long-term commitments, on a restricted land base, emphasizes the need for the development of a comprehensive LUP that reflects community needs and goals. It also emphasizes the fact that land use planning must come before the development of activity plans such as forestry, agriculture, urban development, etc.

Land Use Practices Conflicts

These are the activities that we carry out on the land. If not in line with overall land use plans and management objectives, land use practices may be counter-productive and/or destructive (e.g., burning, indiscriminate operation of equipment, grazing, timber harvesting practices that do not fully utilize the resources or cause unnecessary environmental damage, etc.)

Typical examples:

- indiscriminate and uncontrolled use of fire results in damage to investment
  - garbage/grass burning – continues into adjacent forest/plantation
    - destruction of plantation
    - gradual degradation of natural forest stands
    - degradation of the site (soil degradation)
    - fire is a good tool but often over-used
- indiscriminate operation of equipment
  - includes cats, skidders, snowmobiles, ATV's, 4x4s, etc.
  - driving through areas of investment or natural value/worth
    - value is inherent in forest resources in their natural state
- poor timber harvesting practices
  - poor utilization (leaving profits on the ground)
  - environmental damage
    - rutting
    - blocking drainage
    - damage to advanced growth

Damaging land use practices are usually the result of:

- not knowing better
- sloppy operation
- poor planning
- poor plan implementation
- indifference
- poor supervision

How do we improve and control LU practices?

- awareness and education programs
- proper advance planning
- project implementation must follow the project plan
- develop and implement operating guidelines
- continuous monitoring
- supervision of operations

Land Use Management and Land Use Practices in Sustainable Development

- Land use management and forest management are long-term commitments and require long-term programs. Long-term programs demand **continuity**. Continuity is important to achieve our goals and objectives.
- In order to have **continuity** we must have agreement and commitment from the community (stakeholders) as a whole.
- To obtain this commitment and agreement, the stakeholders must be involved at the initial planning phase; i.e. LU planning. What do the people want to do with their resources over the long-term? Each activity can only be considered in proper context when viewed in context with all other activities being contemplated.
  - The stakeholders must set long-term goals and objectives. The people themselves will only honour commitments that reflect THEIR goals and objectives.
- Sustainability is the result of the continual pursuit of the overall goals and objectives. It is dependent on:
  - Political sustainability – well developed LU and activity plans, including forestry, along with associated policies and regulations must endure political changes.
  - Financial sustainability – re-investment is required (maintenance money). The rules of nature have not changed, "If you take something, you must also put something back."
  - Biological sustainability – require sound biological plans to manage the resources. Once developed, plans need to be implemented, activities supervised, rules enforced, programs monitored, and plans adjusted and renewed on a regular basis.

Without political and financial sustainability our best developed biological management plans are prone to failure. It takes political and financial sustainability to carry biological sustainability.

Conclusion

Our planning process must start with the 'big picture'. It must look at the entire land base in question and consider all of the resources. It must designate land use according to the values and goals set forth by the stakeholders. When this is done individual activity plans, such as forestry, must be developed and implemented.

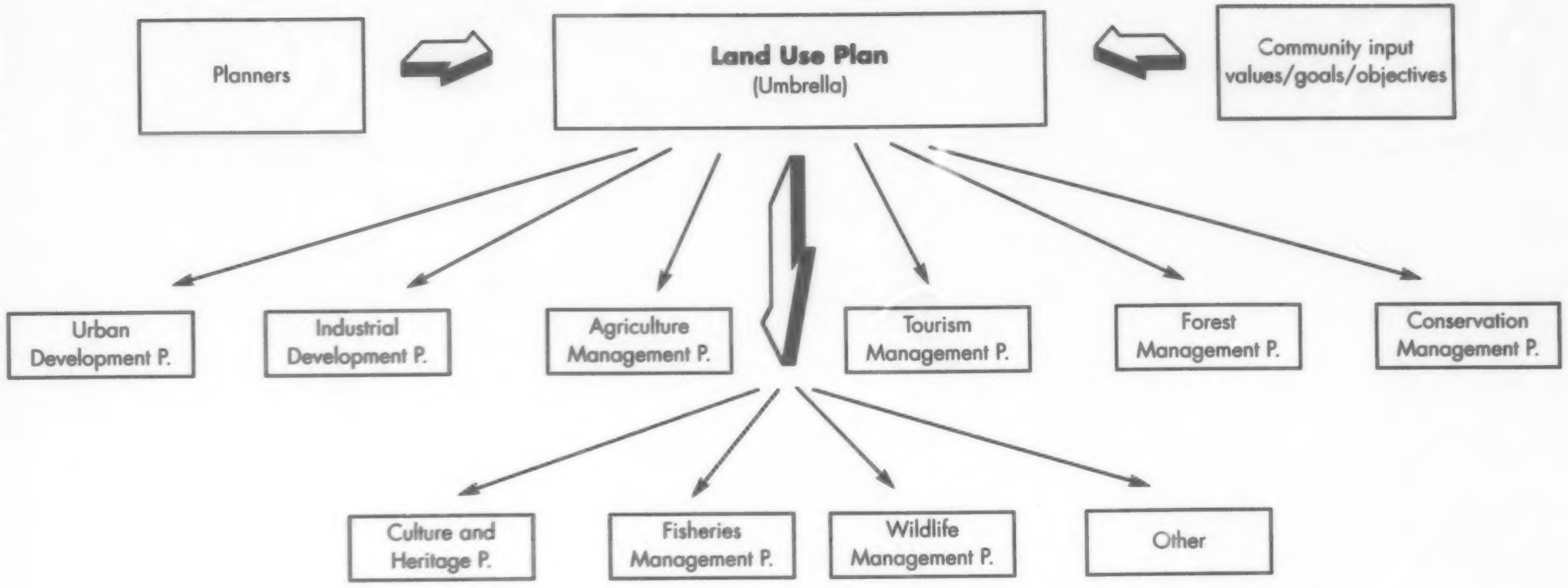
Land use practices can be most damaging when no plans exist or are followed. Where plans do exist, damaging land use practices can undermine activity plans (management plans) and land use plans. Often such practices negate economic investments and efforts towards sustainable management and development. We must inform our people about our management objectives, educate them in proper land use practices, develop and implement regulations to govern land use practices, and enforce them.

Sustainable development can only be achieved through proper multi-level planning and implementation processes. Successful land use management and resource management require long-term, multi-generation commitment. Such commitments will only stand if management strategies and plans are grounded in realistic, community based goals that look towards gradual and continual improvements. Sustainable development is dependent on the trinity of:

- **Political sustainability**
- **Financial sustainability**
- **Biological sustainability**

Figure 1. (see over)

Figure 1. Land Use Plan and Activity Plans Relationship



Workshop II

Agro Woodlot Programs Harvesting for Profit

Chainsaw Operation and Maintenance Course

Scott Davis and Kevin Teneycke
Manitoba Habitat Heritage Corporation

Course Objective

The objective of this course is to provide participants with enough training and technical information to carry out their harvesting operation with profit and safety in mind. The topics covered in this course will include:

Introduction to the Chainsaw

- sharpening and maintenance
- notching and felling
- saw use
- limbing and bucking

The course is broken down into two sections

- in-class theory
- shop and field exercises

This course has been designed for intermediate level users, but even veteran operators have found it useful.

Introduction to the Chainsaw

This section will familiarize participants with all the safety features of a modern chainsaw, the importance of personal protective equipment, tool kit contents, tools and their use, and first aid kit importance. Basic trouble shooting, fuel and oil particulars will be covered.

Sharpening and Maintenance

Proper sharpening and maintenance is the most important function of daily operations. This topic covers all aspects of chain sharpening and basic maintenance to increase production and ultimately profit. Sharpening areas include:

- how the cutter works
- filing tools
- depth gauge importance
- chain tension.

The maintenance section deals with:

- bar inspection and servicing
- clutch and sprocket wear
- engine cleaning
- throttle jet setting
- proper notching and felling

After completion of this section, participants will be familiar with safe methods of proper notching and felling. Tree assessment, escape routes, directional felling and housekeeping will be covered. The Conventional, Humbolt, and V notches will be introduced and proper backcutting techniques covered.

Saw Use

This section will address two different types of saw starting methods and demonstrate proper saw transportation. Kickback is the sudden stopping of the chain and reversal of force back through the saw towards the operator. Kickback prevention will be a focus dealing with awareness and safe saw operation related to a sharp and well-maintained chainsaw.

Limbing and Bucking

Most accidents associated with chainsaw operations occur during the limbing and bucking procedure. The Scandinavian and Sweep limbing techniques and their hazards will be demonstrated. Profit is made and lost during the bucking stages. We will identify proper methods and address the common hazards associated with bucking.

Micro-sawmill and Drying Operations

Byron Boryen
Woodworkers' Sawmill and Kiln

Introduction

This session should introduce you to portable bandsaw mills and simple techniques for drying lumber.

Equipment and supplies on-site include a Wood-Mizer LT40 hydraulic bandsaw mill, blade sharpening equipment, logs, a kiln model, and sawn lumber for stacking.

The presentation should expose you to the equipment and basic skills for setting up a micro-sawmill to serve a community or as a small-scale business.

Our discussions will include information and suggestions for fitting a sawmill and kiln into a community housing project and/or setting up a sawmill for community use.

Bandsaw Mills

What type of sawmill equipment has been available in the past? outline the cost, space, operation, safety and production of circular mills as have been typical in the past

Set up time: we will begin with the mill as towed to site and demonstrate the procedure for setting up the legs and preparing the mill to cut – roughly a 15 minute process

How does the mill work? a quick look at the way the cutting head moves back and forth and up/down, plus the main safety features. Attention will be brought to the fact that a bandsaw mill can cut a log that is almost as long as the mill itself, since the cutting head moves and not the log

What this mill costs: basic mill + trailer + hydraulic options + sharpener – original cost and current cost

Sawmill Blades

- the importance of blades
- blade size and thickness and examination of sawdust produced by the previous demonstration
- types of blades and cost examination and demonstration of sharpening on the grinder and setting process – is this a job to do in the community or should the blades be sent out? what options are available for sending out blades for sharpening?
- installing, removing, and coiling blades – demonstration

Using the Bandsaw Mill

This session will begin with a demonstration of the mill cutting a large log with two operators. The audience will be asked to time the work and observe the tasks of the two operators in producing 2-inch construction lumber. Following the sawing, the audience will examine the boards for accuracy and measure them to calculate production. The points to be emphasized include the number of people that can be kept busy with the mill, the suitability of using rough lumber for construction (after drying), and the mill's rate of production. These concepts should form the basis for planning community use of a micro-sawmill and the labour costs likely to result.

- discussion of the production and operator tasks – what would this suggest in terms of planning a micro-sawmill setup in your community?

Introduction to Drying Lumber

- why is lumber dried? how important is this step?
- increasing the value of your sawn lumber
- which lumber products do not need to be dried? why?

Air Drying

- simple but effective method for construction lumber
- demonstration of stacking, covering, and weighting a load of birch boards
- discussion of drying time, exposure to sunlight
- use of a moisture meter

Kiln Drying

- examination of a 1/4 scale model of a 3,000 board foot dehumidification kiln
- introduction to constructing simple kilns and their operation: cost, location, design
- when would a kiln be preferable to simply air drying?

Discussion and Conclusion

- broad limits of a micro-sawmill – costs, number of people employed, log supply, and production
- providing for drying of lumber – essential in almost every application
- in a housing project, what types of lumber can you produce locally and which are still being produced elsewhere?
- are there simple ways to alter house design to use more locally produced sawn lumber products and less imported goods?
- what sawmill skills can be shown to casual users and which are more technical? what model would work for community use of a bandsaw mill?

F2

Aboriginal Professional Development in the Forest Sector

Harry M. Bombay, Executive Director
National Aboriginal Forestry Association (NAFA)

Introduction

The theme of this conference – *Training to Work in the Forest* – is most appropriate and addresses one of the key elements of capacity-building. It certainly is consistent with the objectives of the National Aboriginal Forestry Association (NAFA). NAFA's mission is to promote increased Aboriginal participation in the forest. Our slogan is *Advancing the concepts of Aboriginal control and sustainable development of forest resources to serve the needs of Aboriginal communities.* In working words, over the past number of years, NAFA has attached an imperative to Aboriginal human resource development in the forest sector.

I appreciate the opportunity to speak on this subject and I'd like to thank the Canadian Forest Service (Edmonton office) for the invitation to be here. I must offer a big meegwetch to the First Nations of Manitoba, Brokenhead and Sagkeeng to name a couple, who I know are represented here.

Training as an Element of Capacity-Building

It is our view that training, education and forest management awareness must be advanced simultaneously alongside the other key elements of capacity-building. Other key elements of capacity-building include **community empowerment** so that basic First Nations' authority is established concerning forest management on-reserves and with respect to the First Nation forest interests in traditional territories. Appropriate **policy development** is needed to link with First Nations governance and to establish an economic infrastructure dealing with revenue generation and relationships with other levels of government. Organizational development of First Nation-controlled institutional approaches to enable First Nations to work collectively on the broad range of forest issues which affect them, and to interface with non-Aboriginal forestry interests, is fundamental to capacity-building.

Aboriginal Professional Foresters as the Bridge

The final key element to capacity-building is professional development, which is the specific topic I'd like to speak to here. In my view, the current lack of Aboriginal professional foresters is one of the most critical skill shortages in this country. I say this recognizing that there are all types of professionals and that our elders, trappers, and others from our communities are professionals and that they possess knowledge which may be unparalleled in forest science.

The type of professional I am focusing on are the graduates of forestry schools who have achieved recognized Registered Professional Forester (RPF) status through appropriate sanctioning bodies when required by law. Aboriginal professional foresters are key to bridging the gap between the forest values of Aboriginal communities and non-Aboriginal forest interests, which as we all know are dominated by the forest industry. In order to optimize the benefits that First Nations can derive from sustainable forest management, we need Aboriginal foresters that understand their cultures and traditions. Aboriginal professional foresters must be able to utilize the wisdom and knowledge of elders to ensure that forest plan development and forest practices are consistent with Aboriginal community goals over the long term.

The Current Status

Of the 12,000 foresters in Canada, there are approximately 16 Aboriginal Registered Foresters in Canada and another 14 people who have BSc forestry degrees and work as foresters or in related positions. We at NAFA estimate that there are about 150 Aboriginal forest technicians/technologists, some of whom perform the work of foresters at the community or tribal council levels. There are numerous jobs within Aboriginal organizations that could or should be filled with experienced Aboriginal foresters (jobs such as mine). To fill the void, First Nations, Tribal Councils, and Aboriginal forestry businesses hire non-Aboriginal forestry expertise as staff employees and most often contract consultants or forest management services firms to carry out much of their forestry work. Two hundred and fifty person-years of work would be a conservative estimate of what is currently expended on acquiring non-Aboriginal forestry expertise.

The Projected Demand

Though there is a shortage of Aboriginal foresters now, the problem is going to become much more acute in the very near future. One only has to look at how the forest sector is changing to realize that Aboriginal communities will have an expanded role in forest management and that forest-based businesses will be a cornerstone of Aboriginal economic development. Some changes in the forest sector favouring increased Aboriginal participation include:

Aboriginal Title, and Aboriginal and Treaty Rights

Court cases have given substance to rights – Forest management and operations cannot infringe/interfere. Duty to meaningfully consult, share in benefits.

Sustainable Forest Management

Criteria and Indicators include sustained traditional use, economic benefits, Aboriginal values.

Table 1. Employment of Aboriginal Foresters

Province	Number of Aboriginal Foresters	Area of Work	Number of Aboriginal Foresters	Percent
BC	14	FN/Aboriginal Organizations	14	47%
Yukon	1	FMS Consultants	6	20%
NWT	0	Industry	2	7%
AB	1	Education Institutions/NGP	4	13%
SK	2	Government	4	13%
MB	1		30	
ON	1			
Quebec	1			
Atlantic	3			
	30			

Table 2. Forest Resource Access by Land Type

Land Type	Management Regime	Size of Land Base	Current Initiatives
Indian Reserve Lands	• Federal jurisdiction through *Indian Act*	• 2300 reserves – 240 in excess of 1000 ha • 1.4 million ha of forested land	• some timber harvesting • NTFPs • community use
Land Claims/ TLE Settlements	• *Federal Real Properties Act* • conversion to reserve status • fee simple	• TLE 1.8 m ha in Manitoba, Saskatchewan and Alberta • hundreds of claims in process	• community use • potential for forestry • economic development
Modern Day Treaties	• terms of treaty (to meet provincial standards) • co-management in surrounding lands	• JBNQA Category I lands of 13,697 km^2 • Nisga'a 2000 km^2 • Yukon First Nations to control 3.9 million ha of which 12% forested	• self governing authority • timber harvesting and forest management • traditional activities
Traditional Territories	• provincial crown land legislation • co-management • interim measures • Aboriginal title and rights, treaty rights	• unoccupied crown land • defined by First Nation – subject to negotiation	• TLUS for land claims and forest management planning • traditional activities – NTFPs • some licensed timber harvesting
Provincial Tenures	• provincial forest management legislation • forest management plans	• 60 First Nations with some form of tenure • Tanizul Timber TFL • Peter Ballantyne Cree Nation FMLA • Waswanip Cree CAAF	• forest harvesting • 30 sawmills/ reman plants • forest management/ services

Certification of SFM Management Systems and Products

- FSC – Principle #3: Indigenous Peoples Rights … shall be recognized and respected.
- CSA – Criterion #6 with indicators:
  1) Aboriginal and Treaty Rights
  2) Participation in, and benefit from, SFM

An Enlarged Aboriginal-Controlled Land Base

(Table 2 – Forest Resource Access by Land Type)

Common Sense

More equitable sharing of benefits. Examples: Saskatchewan and Class EA, Condition 77 in Ontario. Partnerships with industry becoming more commonplace.

To project the demand for Aboriginal Professional Foresters over the next ten years, we can anticipate that there will be additional treaties ratified in BC, additional land claim settlements throughout the country, more First Nations obtaining forest tenure, and that the trend of partnerships with industry will continue. If 200-300 Aboriginal Professional Foresters could be employed now in the forest sector, surely within ten years there will be a need for 500 Aboriginal RPFs. The employment of RPFs and other professionals is generated through the assumption of forest management responsibility and the investment of capital in forest products manufacturing and processing. Demand for Aboriginal foresters can be examined by looking at some examples of how employment is currently generated.

If we were to use a multiplier of one professional for every 20,000 hectares of forested land managed, Indian Reserve lands would require approximately 7 RPFs, TLE lands in Alberta, Saskatchewan and Manitoba would require 90 RPFs, the Crees of Quebec 18 RPFs, the Nisga'a of BC 10 RPFs, and the Yukon First Nations at least 25 RPFs. For the First Nations identified on Table 2, there would be a requirement of 213 professional foresters.

Table 3. Ratio of Professions to Managed Forest Land

Organization Forest Company	License Type	Land Base Size	Number of professional Foresters	Number of Technicians and Forest Plant Workers	Other Professionals	Ratios Pro: Total
Menominee Tribal Enterprises (WI, USA)	Tribal Lands	220,000 acres or 92,400 hectares	13–15	25+ mill operations	Wildlife Biologist Botanist Hydrologist Solid Waste Tech.	Pro – 1 per 4620 hectares
TEMBEC (central ON)	Various holdings	500,000 hectares (350,000 m^3)	25	115	(10?)	Pro – 1 per 14,285 hectares
CANFOR (BC)	TLF #30	181,000 (315,000 m^3)	10–15	portion of 1 mill (80 person years)	Biologists Agrologists Wildlife	Pro – 1 per 15,000 hectares

NAFA's Action Plan

To address the need for Aboriginal professional foresters NAFA has been working on a project, funded by DIAND, to help develop Aboriginal forest management capacity. The project is in response to the federal government's Gathering Strength initiative which called for professional development strategies in the area of Lands and Environmental Stewardship. Since we began this initiative in the fall of '99, we have met with the Deans of Forestry Schools, Professional accreditation organizations, and we held a workshop on the subject attended by almost all of the current Aboriginal RPFs and senior technicians. The result has been an action plan containing the following elements:

1. An awareness campaign directed at Aboriginal youth and communities (what forestry can do for you)
2. Use of a role model approach
3. Education and curricula development (process for input)
    - directed at non-Aboriginal professionals
    - Aboriginal issues awareness
4. Development of a recruitment strategy (bridging and equivalency initiatives) for Forestry Schools
5. Aboriginal Professional Foresters network and communications

From the Action Plan, we will be developing a series of proposals to obtain funding for implementation. In this regard, we are discussing a partnership with the Aboriginal Human Resource Development council, which will target the forest sector for special human resource development initiatives.

Workshop III

Log Scaling and Lumber Grading

Barb Janke
Saskatchewan Environment and Resource Management, Forest Ecosystems Branch

Introduction

Scaling is the measurement of logs for the payment of Crown dues and reforestation fees and timber depletion volumes.

The Saskatchewan Scaling Manual is the standard used in the province, and is based on national standards set by the Canadian Standards Association.

Scaling plays a significant role for users of the timber resource

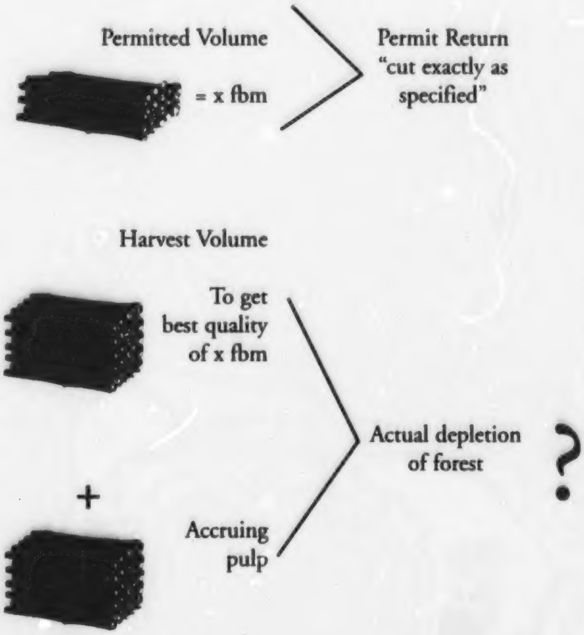
Government
- As a basis for the collection of dues and fees
- To verify if the amount of timber harvested is within approved limits
- For planning future sustainable harvest levels

Industry
- As a basis for buying and selling timber
- For paying dues and fees
- To calculate timber supply costs
- For planning future harvests

Past Situation

- References to scaling in the past Act and Regulations were minimal and not obligatory.
- For independent operators, the volume harvested and payments owed were determined by the quantity of products specified on the permit, not the volume of logs from which the products were manufactured.
- Because dues and fees were only payable on the products produced, there was an incentive to use the best portion of each log and leave the rest as waste, or pulp a larger volume than need be.

Forest Products Permit


Permitted Volume
= x fbm
Permit Return
"cut exactly as specified"
Harvest Volume
To get best quality of x fbm
+
Accruing pulp
Actual depletion of forest
?

- In the majority of cases, volumes of logs harvested under the authority of a permit were not measured and the dues and fees were based on a piece count or a lumber tally as reported by the permittee.
- FMA holders were required to scale for the payment of dues and fees.
- Those that weigh scale were using coefficients that were based on studies up to 30 years old.
- These situations have resulted in inaccurate volume estimates being used for depletion records, planning processes, and dues payments.

Forest Resources Management Act and Regulations

ALL TIMBER MUST BE SCALED BEFORE PROCESSING

- The new Act and Regulations address many more aspects of scaling than in the past.
- All Forest Management Agreement holders, Term Supply Licence holders, and if requested, Forest Product Permit holders must complete a scaling plan. These plans vary from one page plans to multi page documents. Companies required to sample scale must address the sampling procedure, intensities, and stratification requirements among other items in their scaling plan.
- Licensees who weigh scale or stack scale at the entrance to a processing facility, or those who tree length scale more than 30,000 cubic metres per year must sample scale.
- Scaling must be carried out at staging areas or at the entrance to the processing facility.
- Scaling must be carried out within 90 days of harvest.
- Timber scaled at a staging area must be left in place for 48 hours to allow for a check scale.
- The licensee is responsible for the costs of the scaling and if necessary, the sampling.
- Scaling returns must be submitted within 20 days after the end of the month in which the scale was completed.
- Scalers must hold a current Saskatchewan Scaler's Licence and valid endorsement for the scaling technique to be used.
- Scaling standards are set out in the Saskatchewan Scaling Manual and are referenced as requirements pursuant to the *Forest Resources Management Act* and its regulations. All scaling shall be carried out by licenced scalers holding a valid Saskatchewan Scaler's Licence.
- Scalers will be employed by the licensee and comply with the standards set out in the Saskatchewan Scaling Manual.
- Scalers will be audited by Environment and Resource Management check scalers.
- Scale information and reporting requirements are being standardized.
- Scale tickets will be required for roundwood measured on landings as well as for loads measured at mill gates.
- Scale records will be submitted monthly to Forest Ecosystems Branch.
- This information will be used in conjunction with load slips to ensure that all harvested roundwood is accounted for and appropriate fees have been paid.

Up To Date Conversion Factors

- A cubic metre is a cubic metre.
- Mills wishing to stack scale or weigh timber for the payment of dues and fees will be required to conduct continous sample scales to ensure that correct conversions to cubic metres will be used.
- Factors will be updated at least once per year.

Training and Licence Requirements

- To ensure that all scalers within the province achieve a high level of accuracy, consistency, and competency, all persons must successfully complete scaling examinations before being eligible to apply for a licence to scale.
- It is the scalers' responsibility to ensure their licence to scale is valid and renewals are completed before the expiry of the licence to scale.
- Scalers will not be allowed to scale after the expiry date of their licence if they have not sucessfully renewed their licence to scale.
- Scaling and refresher courses are offered at least once per year.
- Passing requirements are:
    - 75% or better on a written examination
    - +/- 3% variance from test scales on a practical scaling exam
    - 75% or better on a tree species identification exam
- A scaling licence is valid for a period of time, not to exceed 5 years, or a lesser period of time as stated terms of the scaling licence.

Scaling Plan (field)
for Forest Product Permit holders

(Approval must be obtained prior to transport of wood)

This plan is the authority for ____________________

licensee, of ____________________
(city/town)

to scale forest products in the manner indicated below.

Annual Operating Plan #(s) ____________________

Permit # ____________________

Approved Volume ____________________ m^3

Method of Scale: (As per the current edition of the Saskatchewan Scaling Manual)

☐ Tree Length

☐ Individual logs

☐ Stacked with 1 m^2 samples

☐ Piled logs

OR

Method of Measurement: (if applicable):

☐ NTL01 (less than 250 m3 manually)

☐ Standing tree measurement

☐ Tops (less than 10 cm) estimated

Place of Scale:

☐ Scale timber at staging area before transport

Authorization to:

☐ Timber grade as per the Saskatchewan scaling manual, current edition.
(requires regional forester's approval for timber grade dues reduction)

☐ Scale completed by another processing facility(s).
Letter(s) of agreement(s) to be attached. List facility(s):

____________________ Max. accepted volume __________ m^3

____________________ Max. accepted volume __________ m^3

____________________ Max. accepted volume __________ m^3

____________________ Max. accepted volume __________ m^3

Woodflow Reporting:

☐ Not required

☐ Required within 20 days of each month end as per attached form.
Nil reports must be submitted if no activity in a given month.

Scaling Plan

For Processing Facilities or Licencees requiring a sampling plan

Approval must be obtained prior to transport or acceptance of wood

This plan is the authority for ____

licensee, of ____

(city/town)

to scale forest products in the manner indicated below.

Method of Scale: (As per the current edition of the Saskatchewan Scaling Manual)

☐ Mass

☐ Stacked

Place of Scale:

☐ Processing Facility Entrance

Authorization to:

☐ Timber grade as per the Saskatchewan Scaling Manual, current edition.

☐ Scale timber harvested under other authority(s). See attached list.
(List of agreements to scale or scale and remit dues and fees.)

Reporting Requirements:

The attached list (List of agreements to scale or scale and remit dues and fees) shall be kept up to date and submitted with the scale returns.

Woodflow:

☐ Required within 20 days of each month end as per attached form.
Nil reports must be sutmitted if no activity in a given month.

Scale Returns:

☐ Monthly, all applicable dues and fees to be paid within 20 days after the end of each month. The dues and fees are to be based on the volume of timber scaled in that month and includes all authorizations who have entered into an agreement to have their timber scaled, and dues and fees paid by the above processing facility. In the case of S1 timber, the dues rate to be paid shall be the current rate for the month in which the timber was scaled.

☐ Quarterly, all applicable dues and fees to be paid within 20 days after the end of each quarter. The dues and fees are to be based on the volume of timber scaled in that quarter and includes all authorizations who have entered into an agreement to have their timber scaled and dues and fees paid by the above processing facility. In the case of S1 timber, the dues rate to be paid shall be the current rate for the quarter in which the timber was scaled.

All provisions and requirements of the Forest Resources Management Act and Regulations and the current edition of the Saskatchewan scaling manual must be adhered to, including:

- Any adjustments to this plan must be done so in writing to the issuing office. approval must be obtained before transport of timber can commence;
- No timber may be accepted without a Forest Product Shipping and Receiving report to accompany the timber.

______________________________ ______________________________

Signature of Applicant Date of Application

- Scaling course is three weeks in length.
    - Week 1 - Scaling licence
    - Week 2 - Stacked and Mass endorsements
    - Week 3 - Tree length endorsement
- A scaling licence is required before any endorsements are valid.
- The course is structured to allow students to take any or all of the available endorsements.
- A licence may be suspended or cancelled if the scaler:
    - Fails to scale or measure forest products in accordance with procedures and standards specified in the terms of the licence or manual
    - Is in contravention of any term of the licence or manual
    - Provides false information, or fails to provide information to the chief scaler when requested to do so
    - Submits a return that varies by more than five percent from a check scale completed on the same timber
    - Acts in any other manner that, in the chief scaler's opinion, warrants amendment, suspension or cancellation.
- A demerit point system is being set up to assign a number of points to various scaler infractions.
- Too many points will cause the licence to be suspended or cancelled.
- These points will remain on the scaler's file for a period of three years.
- If a licence is cancelled the cancellation may not last for more than three years.

Duties of a Scaler

- hold a valid licence with appropriate endorsements for the type of material to be measured
- scale fairly and accurately according to any approved plans or agreements
- scale according to the *Forest Resources Management Act* and/or *Regulations*, as well as any written instructions from the Minister
- fully understand the conditions of the harvest authorization or scaling plan
- report illegal or wasteful practices to the chief scaler
- ensure that all scaling equipment is adequate and accurate for the scaling technique to be used
- ensure that all necessary forms and stationery are available and in adequate supply
- maintain adequate and accurate records
- ensure that all information on the scaling form is complete and that all returns are submitted within required time limits
- scale timber within 90 days unless otherwise authorized
- scale according to the current Saskatchewan scaling Manual and approved scaling plan

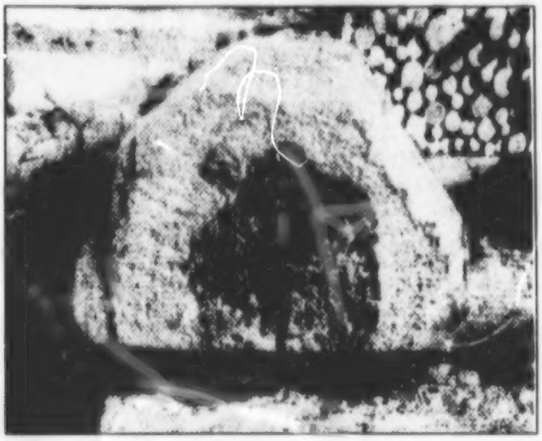
Responsibilities of a Scaler

- keep current with changes or modifications to scaling manual and relevent endorsements
- be able to identify in log or bolt form the commercial tree species common to the area in which they are employed
- successfully complete all refresher courses as may be required from time to time
- if involved in a sampling program ensure that:
    - all sample loads are chosen in a random fashion
    - no sample loads are substituted without authorization
    - the sampling program complies with the approved scaling plan
- ensure that the applicable annual renewal fee is paid by April 1 of each year

Types of Defects

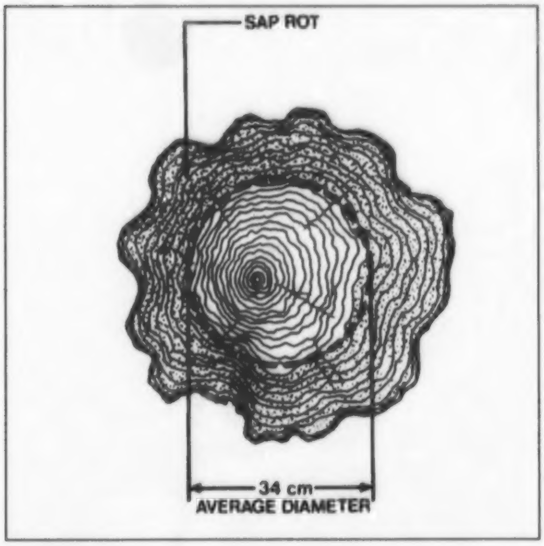
Butt Rot

- soft, punky or missing wood at the large end of butt logs only
- often indicates over maturity



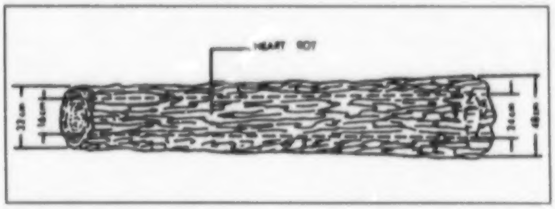
Sap Rot

- outer portion of the log is decayed, often around the complete circumference
- often indicates that the log has been lying on the ground for a considerable period of time



Heart Rot

- decayed heartwood in logs, may be visible at one or both ends of the log
- usually circular or semi-circular in cross section

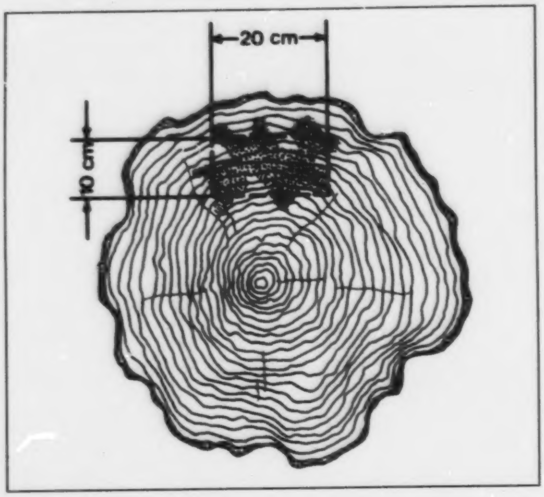


Ring Rot or Shake

- interior decay or shake in the form of a ring around the pith enclosing a core, and enclosed by a shell of sound wood

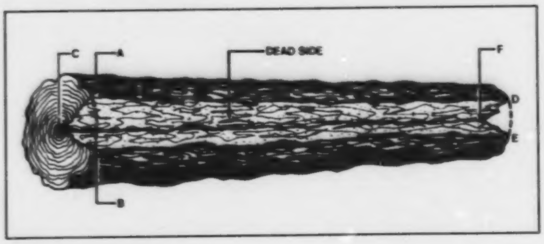
Pipe or Pocket Rot

- interior decay other than butt or heart rot; frequently occurs at several locations of the same cross section



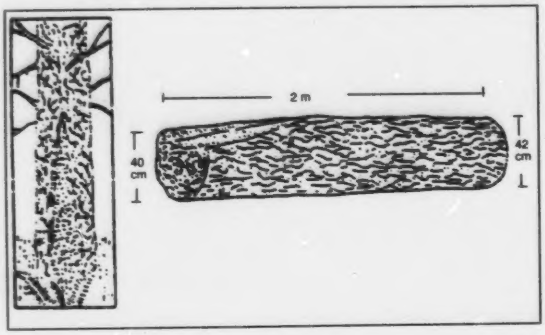
Dead or Missing Side

- decay extending from the surface to the pith, enclosed approximately by lines of radius
- very uncommon, mostly found in mismanufacture



Cat Face or Fire Scar

- dead portion of the outer surface of the log that the tree failed to rejuvenate following some old disturbance



Insect Damage

- insect burrows sufficiantly excessive so as to result in a significant loss of sound wood

White Fleck

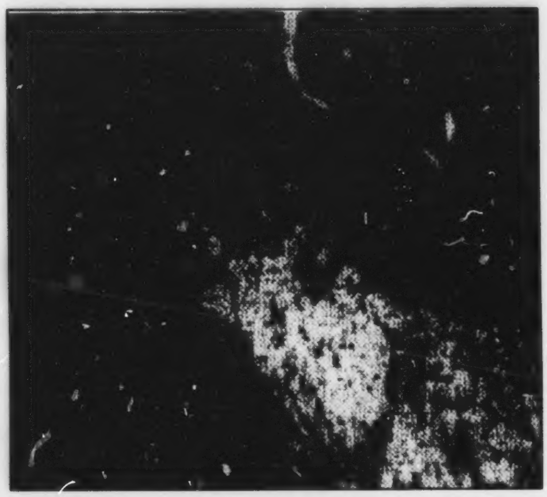
- primarily a heart rot of living trees which enters the tree through branch stubs and causes a trunk rot; it may occasionally enter through basal scars, causing a butt rot
- in the early stages of decay, the wood will show a pinkish to purplish-red discoloration and as the decay progresses, small white lens-shaped pockets develop parallel to the grain; the wood between these pockets is discolored but firm
- in advanced stages of decay the pockets become soft and punky

Forks and multiple stems

- weather conditions or damage (wildlife or neighbouring trees) has resulted in the main leader being damaged and two or more lateral leaders take over as the main leader
- there is no actual deduction for this type of defect, when bucking a tree with this deformity it is necessary to eliminate the deformity whenever possible; as long as the forks or multiple stems meet the minimum size standards, scale as single trees

External Indications of Rot

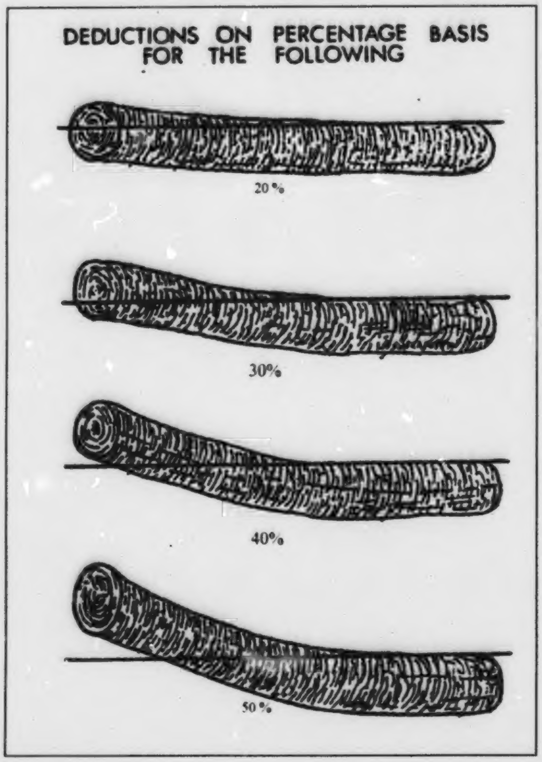
- in order to determine the length of rot in a bolt, external indications are used whenever possible; this is where a scaler's experience, or experience with timber harvesting and bucking is great asset
- when external indications are not present, general rules are used for each measurement technique
- other external indications of rot may be lightening scars, bark seams and frost cracks, conks and burls



- quality deductions (sweep, crook, checking) do not reduce the amount of fibre in a tree or log; they do however reduce the uses of the log
- these deductions are not applied on a regular basis to all licensees; the use of quality deductions must be approved in a scaling plan

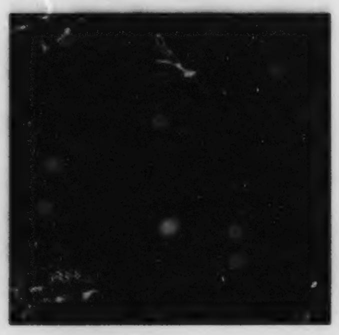
Sweep

- as a result of site, weather conditions or damage from neighbouring trees, the tree may grow with one or several curves or sweeps in the trunk



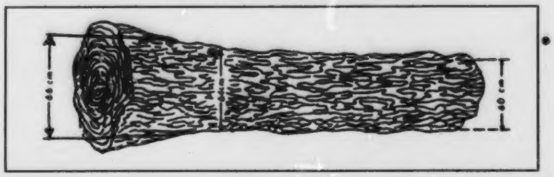
Crook

- as a result of site, weather conditions or damage from neighbouring trees, the tree may grow with a sharp bend in the stem, similar in shape to a chair
- checking (straight and spiral) is a result of a fast drying of the tree, usually caused by a fire; the cracking follows the grain; both types of checking cause a degrade of product quality, however spiral grain is worse



Types of Scaling

- licence
  - individual log measurement
  - piled log measurement
- the sound cubic quantity of wood in any log can be determined by:
  1) measuring the external dimensions of the log to estimate the gross volume
  2) measuring or estimating the dimensions of any defective portion of the log to determine defect volume.
  3) subtracting the defect volume from the gross volume to determine the net volume.
- logs are measured in line with the normal taper of the log. In the case of a butt log, the log is measured in line with the butt taper. In the case of butt swell (in excess of the normal butt taper) the diameter is measured inside the butt swell.

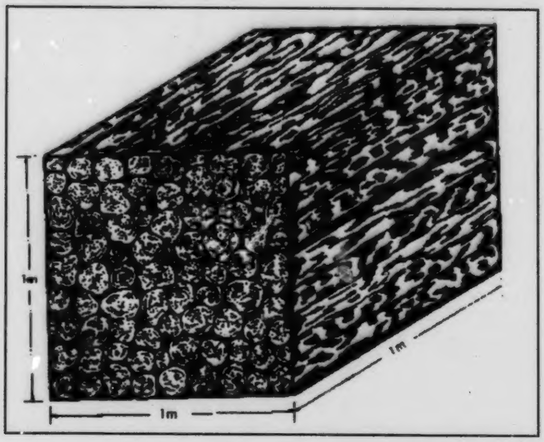


In the case of an abnormal protuberance at the point of diameter measurement, such as is caused by a burl, branch whorl, fork or disease swelling, the diameter is to be reduced to what it would be if there was no protuberance.

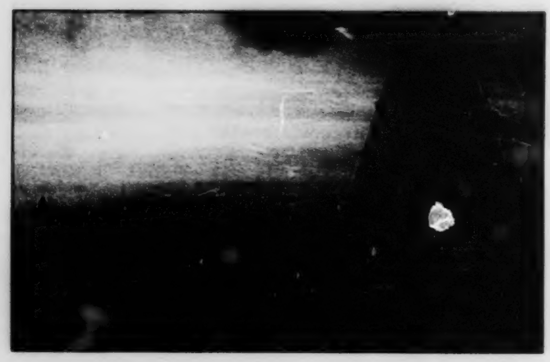
- the gross volume of the log is calulated using Smalian's formula
  - the average of the areas of each end times the length of the log.
- solid volume of piles logs is used to scale piles of logs of any uniform length up to 5.1 metres.
- logs are usually measured from one side only.
- the diameter of each piece is measured.
- a minimum of ten log length measurements are taken for the pile to obtain pile width.
- the total volume of each piece in the pile is then determined.
- defects are assumed to extend the full width of the pile, to a maximum of 2.6 metres. If there is excessive decay present, it is to the purchasers benefit to spread the logs out and measure them using the individual log method.
- the net volume of the pile is determined by subtracting the defect volume from the gross volume.

Stack Scaling

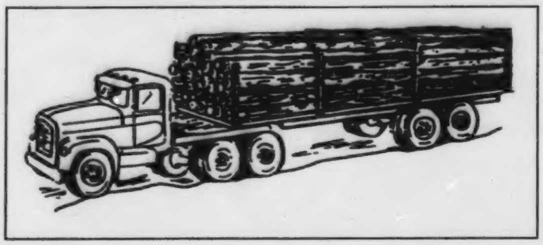
- Stack scaling consists of measuring the dimensions of a pile (average height, width, or log length and pile length) to determine the volume in stacked cubic metres.
- One cubic metre stacked is the amount or roundwood that will fit in a space 1 metre by 1 metre by 1 metre.
- A solid cubic metre is a cubic metre of wood fibre.
- A stacked cubic metre contains wood fibre, air, and usually bark (unless the roundwood has been peeled).



- Preparation of a stack for scaling:
    - all bolts are to piled on skids
    - the immediate surrounding of each pile must be cleared and a lane of 1.5 metres left between piles
    - stacks are not to be piled agains standing trees
    - piles are to be made so as to present one even vertical face and contain bolts of the same length class
    - the bottom of each pile should be as level and horizontal as possible
    - bolt must be trimmed evenly of all limbs and knots
- General procedure for stacks on the ground:
    - at equal intervals along the pile, take height measurement
    - measure the length of the face of the pile
    - measure a minimum of ten bolts lengths to determine the width of the pile
    - height × length × width = gross volume m^3 (stacked)
    - the volume of defects and voids in the pile
    - determine the net volume by subtracting the volume of defects and voids from the gross volume
    - because this is a stacked cubic metre you still have to determine the volume of solid cubic metres in the piles
- To do this, you must measure the diameter of the bolts in 10 percent of the face area of the pile.
- One metre squares are marked on the face of the pile; the squares must be placed randomly across the pile so as to be representative of the pile; the diameters of all the pieces in these squares are measured.
- The solid volume per stacked cubic metre can be determined from this and applied to the whole pile.
- For example - softwood - approximately 65 % of a pile of roundwood is actual wood fibre; the rest is bark and air.
- Hardwood is approximately 55%.



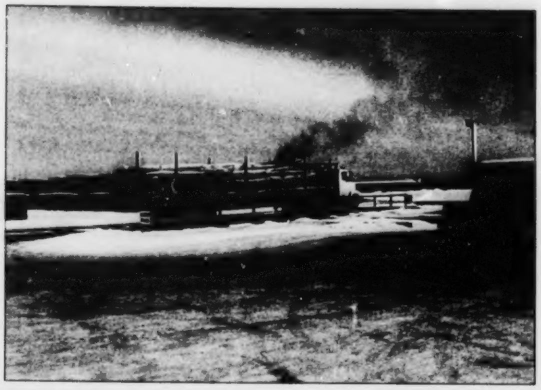
- Several factors affect how much solid wood is in a stacked cubic metre, they are:
    - species - softwoods are usually straighter than hardwoods
    - bolt length - short bolts pack tighter than long bolts
    - bolt diameter - larger bolts yield more solid wood per stacked than small bolts
    - bark - peeled piles have more solid fibre than piles with bark on the logs
    - piling method - hand piles are usually straighter and neater.
    - limbs and knots left on bolts prevent them from piling tightly together and will cause more air space
- Stack scaling on trucks:

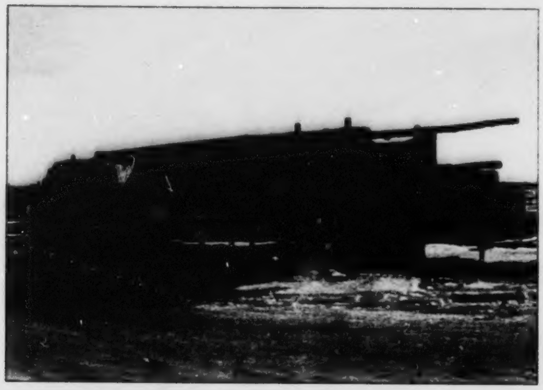


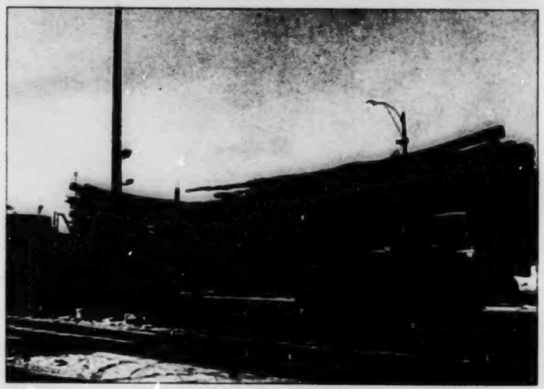
- This method of scaling has been used on the east side of the province (SK) for the last twenty years.
- The height of each tier of wood is measured on each side.
- The bolt length is known, and spot checked.
- The trailer length (the total distance between the side stakes for each tier of wood) is recorded for each trailer.
- Deductions are made from the front and back tiers on the truck and averaged for the load.
- A net volume in stacked cubic metres is determined for the load of wood.
- This process takes less than five minutes to complete.
- To determine the solid volume of wood arriving at the mill the company must sample scale their trucks.
- To do this, they complete a sampling scaling plan that must be approved by Forest Ecosystems Branch (FEB).
- Loads are randomly picked by computer or pull tab sheets issued by FEB.
- Sample loads must be unloaded in the sample yard, each piece must be measured to determine cubic volume for the load.
- From these samples, a conversion factor is determined based on each mill, and each length of wood arriving at the mill.

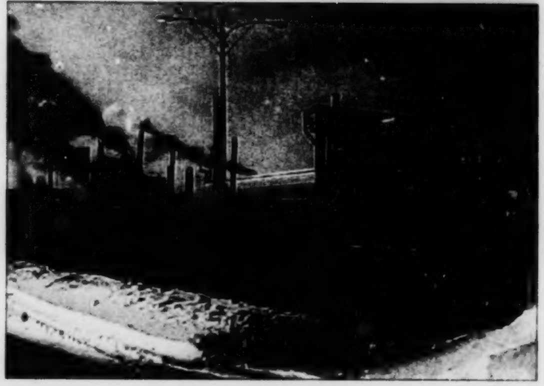
Mass Scaling

- This method is used by the larger mills in the rest of the province.
- It is a quick way to handle large volumes of timber arriving at the mill gates.
- Companies wishing to weigh scale timber must also sample scale a proportion of their loads.
- Again loads are picked randomly, samples are set aside, and the complete load volume is measured.
- Factors that affect the weight to volume relationship are foreign material, moisture, density, bark, and rot. Moisture is the most variable.
- Factors that affect moisture content:
    - species
    - the length of time from cutting to hauling
    - salvage timber -firekilled, insect damaged or diseased timber.
    - several years of drought or rain.

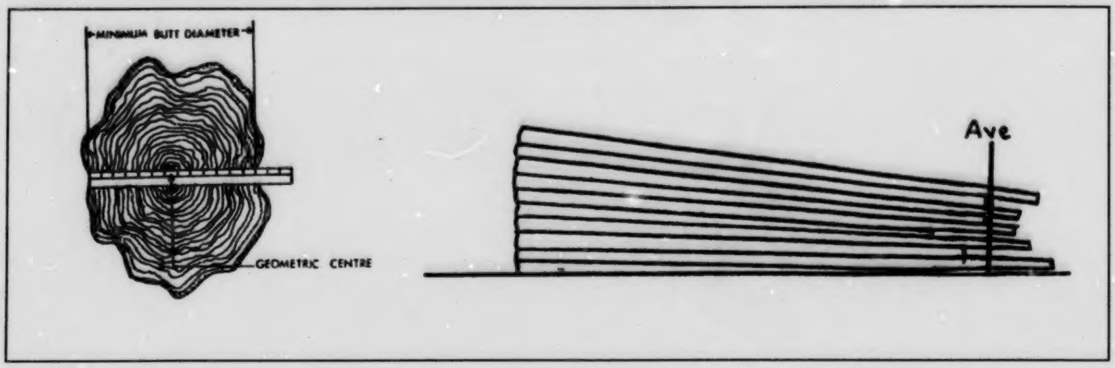




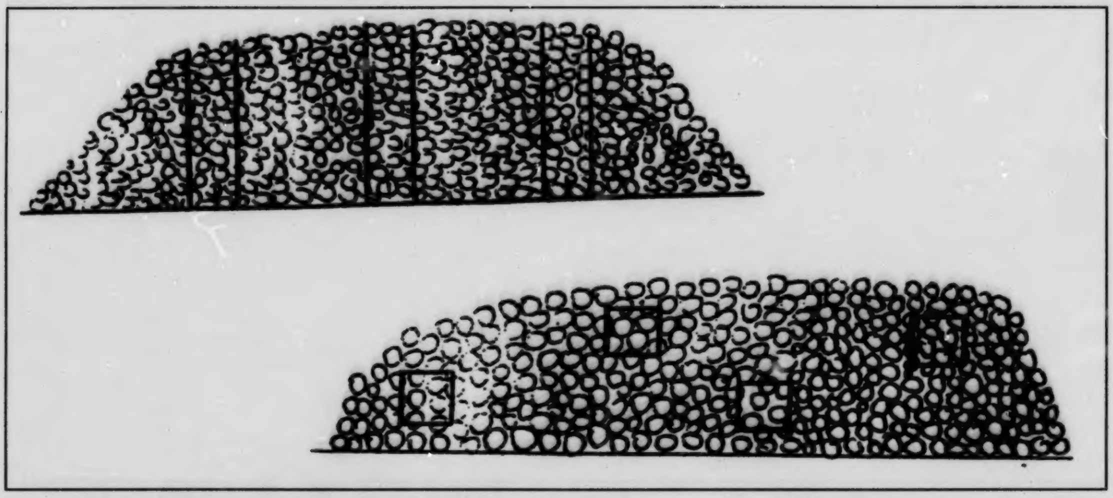




- Treelength scaling allows for the measurement of piles of timber in treelength form.
- Volume is based on the minimum butt measurement of twenty percent of the pieces in the pile.
- Volume tables have been developed based on the average length of the treelengths in the pile.



- Determining which tree butts to measure:
  - count the trees in the pile, and measure 20% of them, or
  - measure the area of the face of the pile and measure 20% of it, or
  - total tree measurement in some cases.



- As with stacked wood, sample areas should be randomly placed on the pile; however, ensuring that the sample areas are placed on representative portions of the pile is the most important.
- Choose the correct tree volume table based on species and tree length class:
  - calculate the diameter distribution and associated volumes for the 20% sample areas
  - if exactly 20% has been sampled, multiply the sample volumes by 5 to obtain the gross pile volumes
  - do the same for defect volumes found in the sample areas
  - subtract defect from gross to get net pile volume

Scaling for Dues Classes

- With the passing of the new Act and Regulations, changes were made to the product classes for the payment of Crown dues.
- Rather than have a variety of products and sizes as in the past, value was placed on a tree or log of a certain size. In this case, the final destination of the tree doesn't determine its value, its size does.
- For all softwoods, the Crown dues classes are called S1 and S2.
- S1 timber is any timber with a diameter greater than or equal to 14 cm.
- S2 timber is anything less than 14 cm.
- Every tree with a butt measurement greater than 14 cm will have some percentage of S1 and S2 timber in it.
- A scaler will more than likely be required to determine the S1 / S2 split for the licencee.
- When scaling individual logs, some logs will be all S1, some all S2. For a log that has one end greater than 14 cm and the other end less than 14 cm, the scaler will have to determine where on that log the 14 cm mark is, and the volume of each piece. This can be done without cutting the log.
- For piles logs, where the scaler is measuring every diameter, the S1/S2 split will be determined from the measured diameter. If the end that is measured falls into the S1 class, then the whole piece will be assumed to be S1. If the end measured falls into the S2 class, the whole piece will be assumed to be S2.
- For stacked wood, the S1/S2 split is determined at the same time as the solid/stacked conversion is developed. The diameters measured in the one metre squares will be used for the S1/S2 split as well as for the conversion factor.
- For treelength scaling, the butts that are measured in the sample areas or squares will be used to determine the S1/S2 split also. The treelength tables that are used to determine volume for the sample trees will also have the volume of S1 and S2 per tree for each butt diameter size.
- In the case of a company that must sample scale, the percent of S1/S2 timber arriving at the mill will be determined through the sample scaling:
    - H1 - all ash, birch, elm or maple, greater or equal to 14cm in diameter.
    - H2 - all ash, birch, elm or maple, less than 14 cm.
    - H3 - all hardwood, except the above, greater or equal to 22 cm.
    - H4 - all hardwood, except the above, less than 22 cm.
- Due class split for hardwood timber is done in the same fashion as for softwood timber.

Workshop IV

Loghouse Construction

Mike Watt
Watts World of Wood

Plans

It is important to have detailed plans with windows, doors, wiring, plumbing information. Some experienced log builders sell pre-designed plans or will design custom plans. Design your own if you have log building knowledge. Some architects have experience designing with logs.

Log Acquisition

The plan will let you know what you need for logs. You can get logs from your own forest, sawmills, or private loggers. Good logs should be sound, reasonably straight, evenly sized, have no severe spiral grain and not too much taper. Manitoba usable species are white pine, white spruce, white poplar, tamarack, and jack pine. Oak, Ash, Cedar and other species lend themselves better to building with short logs or post and beam, as they tend to have shorter straight lengths.

Log Peeling and Treatment

Spring peeling is easiest, and faster. Use a drawknife and/or barkspud. Cut off extruding branches and smooth out with a sander. Pressure spray logs with a minimum 3000 PSI sprayer. Exterior staining can be done once the building is erected.

Log Handling

You need to be able to move logs around and lift them. A front end loader with fork extensions and a set of log tongs works well. A backhoe, crane, or skyline rig will work as well.

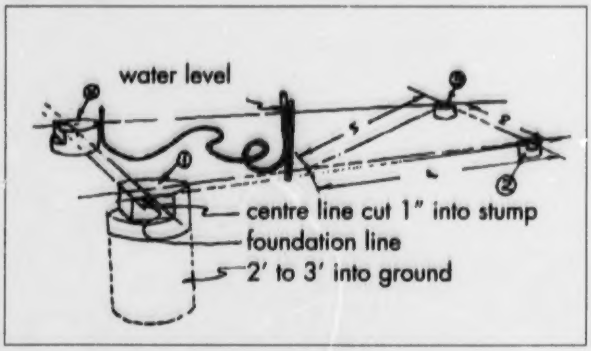
Temporary Foundation

Lay out temporary foundation on the ground and mark corners. Cut short logs and bury and pack one end in the ground at the marked spots. Cut the posts off level. Lay out actual building foundation on top of stumps and cut the corner logs square on top as if they were the actual corners of the foundation. Mark centrelines on the stumps where they will line up with the centrelines on the logs.

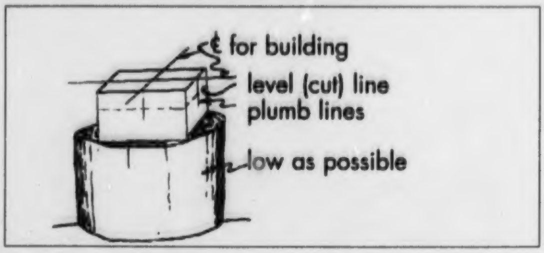
Level Board

Set up a level board in a secure location close to the building site. This will be used throughout the construction of the building.

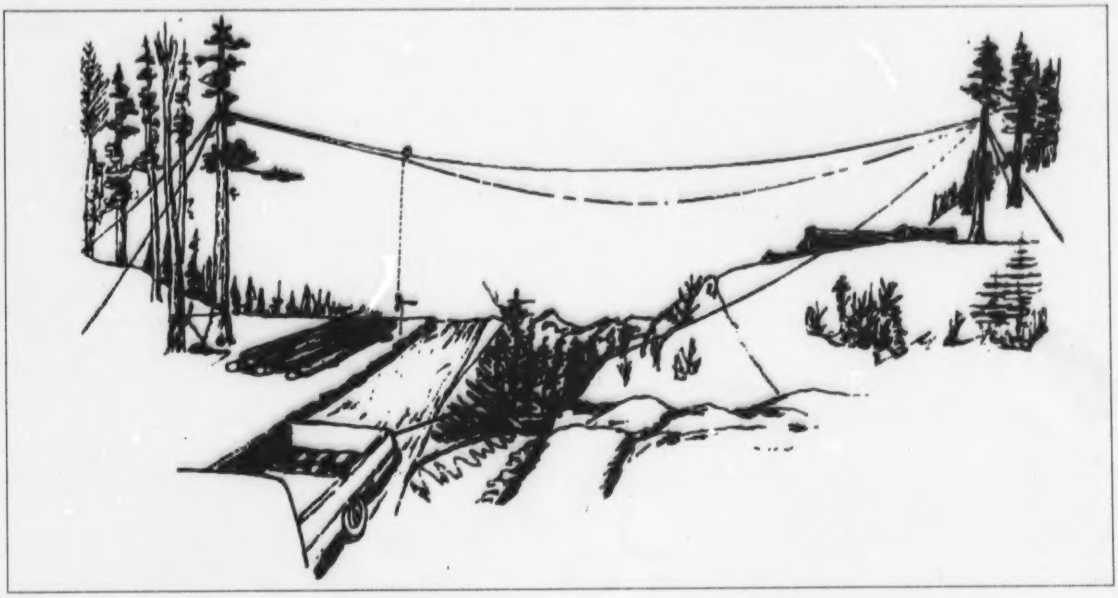
Sill Logs



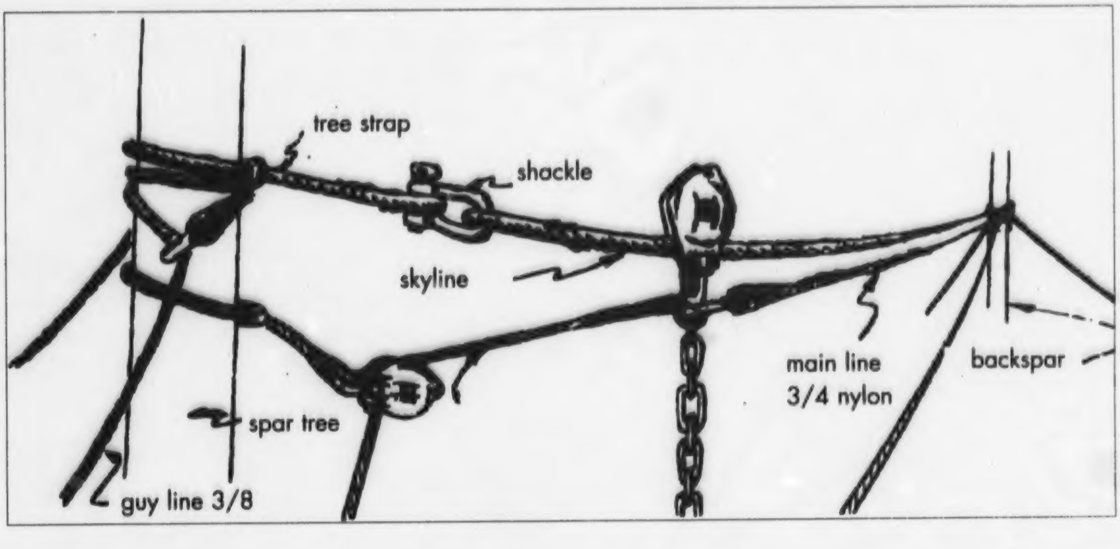
Layout and leveling of temporary foundation(stumps)

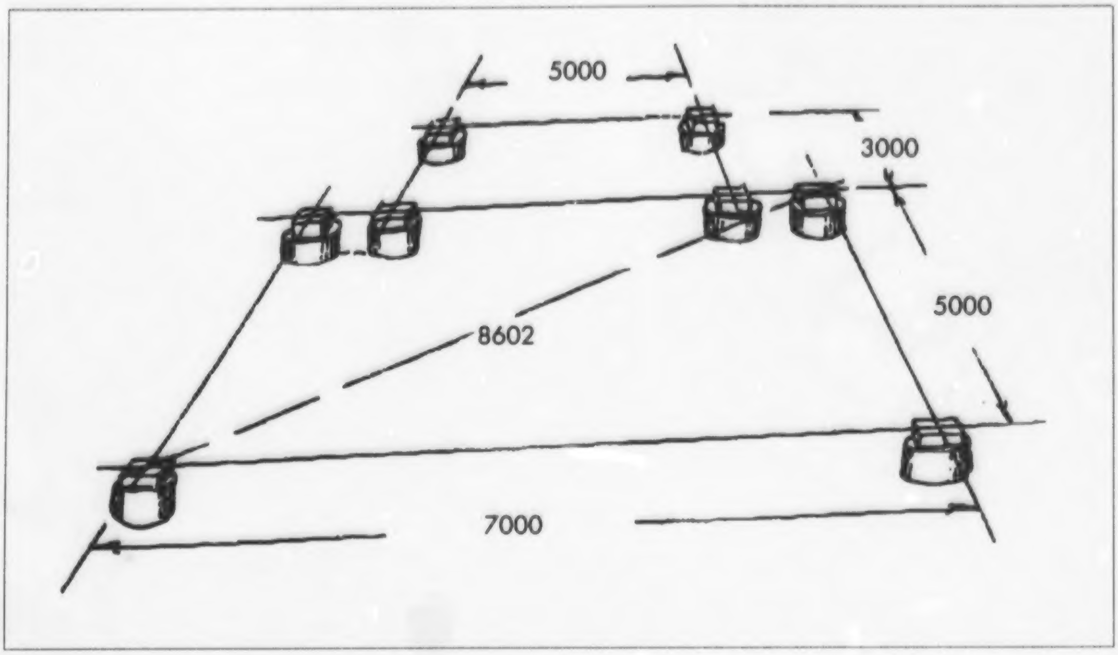


Possible extraction setup for use with come-along or chain block



Detailed view





Snap centre lines on a large log and cut it into two half logs. Snap lines on two other logs and cut two three-quarter logs. Plane the flat sides smooth. These first logs will have centrelines, reference marks, drop break lines and may have window and door locations marked on them. All these markings will be used as the building goes up. Place the two half logs on the foundation stumps with the butts running the same way and the centrelines lined up on the stumps. Nail or screw them in place so they don't move. Set the two three-quarter logs across both ends of the half logs again, with both butts running the same way. Make sure they are sitting level and scribe them to fit the half logs. Remove them and cut out the notches. Place them back over the half logs. All four flats of the logs should be flush and level on the bottom and all the centre lines should line up.

Scribing Wall Logs

All the rest of the logs will have centre lines snapped on them before they set up on the wall to be scribed. The centre lines on the foundation stumps will be carried up all the way to the top of the wall in this manner. Each round of logs on a wall will have the butts facing alternate directions. That way, every second round will bring the wall height back to near level. a record of corner height is written on the end of every log as you go to help keep the corner heights close to the same. Shims and adjusting scriber settings are used to keep the wall heights close. Each log in turn will be placed on the wall, have the centre lines lined up, dogged into position, and scribed. It should then be taken down and placed in a comfortable cutting position and cut out. It then goes back on the wall and should fit snugly into position. As the walls go up, lock notches or square notches may have to be used as necessary. Short logs can be used on the sides of windows and doors as they will be cut out later anyway. Generally, the biggest logs are on the bottom and get progressively smaller as the walls go up. A few choice logs may be saved for plate logs and the roof system.

Header Logs

Once window and door header logs are scribed and set into place, measure up from the bottom of the sill logs and mark heights and widths of the windows and doors. The windows on any side of a building should be the same height. Be sure to allow for shrinkage above the windows and doors and for any extra framing that goes around the windows and doors. After the logs are marked, take them down, place them in a comfortable cutting position, and cut out the headers. Shrinkage for green logs is about three quarters of an inch for every foot of log. You only have to worry about shrinkage in height, not in length.

Plate Logs

This is the last log on the wall and may be cut flat on top or to the pitch of the roof. It may also support second floor joists. These logs should be straight and be the same height on all four corners. The measurement between centre lines of these logs should be the same as the measurement between centre lines on the foundation stumps.

Upper Floor Joists

Log floor joists should be square notched into wall logs for stability. They will be cut flat on top all at the same height to accommodate floor boards.

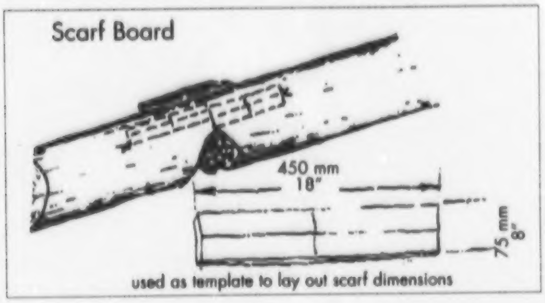
Cap Log

The cap log goes over all the floor joist logs and will have several notches cut in it. If the roof system is post and beam, the cap log will be cut flat on top to receive one or more posts and framed gable end. It may have mortises cut in it and it may be left round.

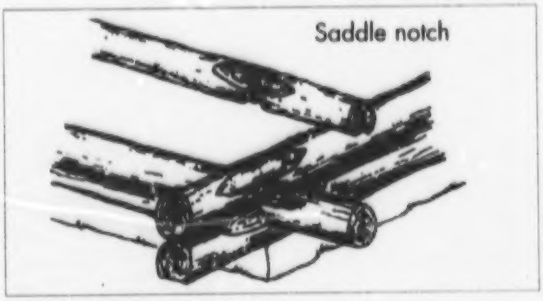
Roof System

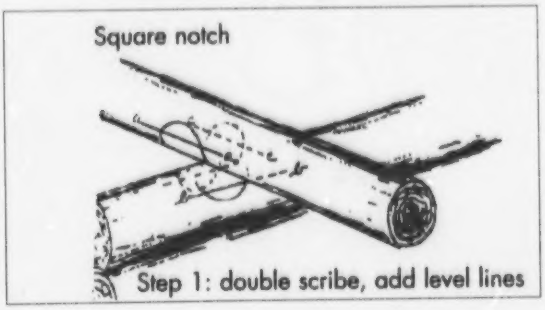
The roof system will have been designed at the early stages and will be part of the building plan. It could be post and beam, with or without purlins, gable log ends with ridge pole and purlins, primary rafters with purlins, or just ordinary rafters sitting on flattened plate logs. Log or plant rafters may be used. Most roof systems can be built on the ground where it is easier and safer and put up after they are completed.

Other Notches

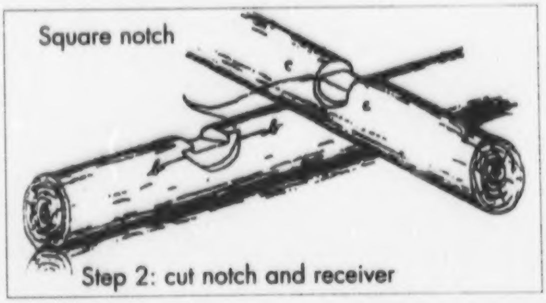

Scarf Board

used as template to lay out scarf dimensions


Saddle notch

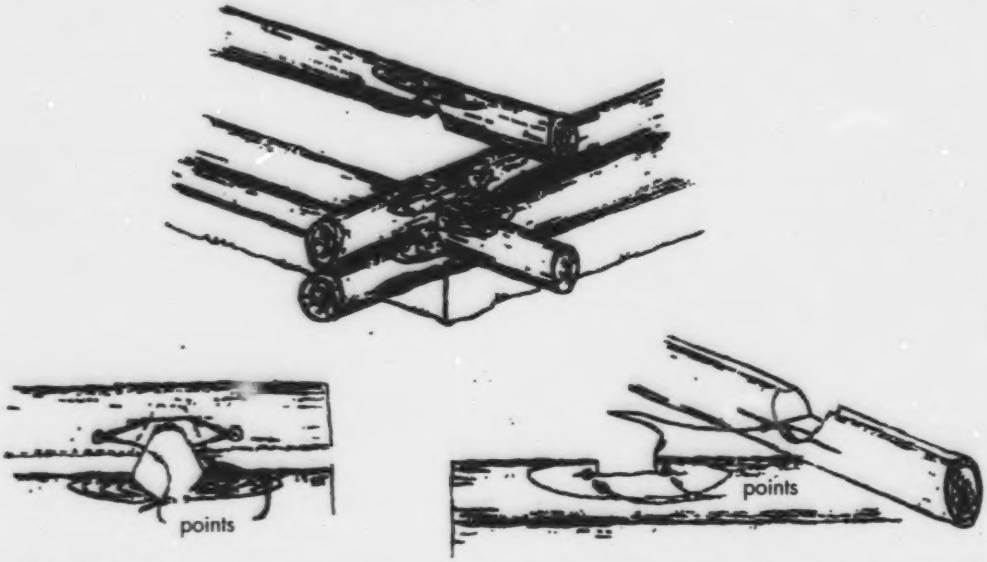

Square notch

Step 1: double scribe, add level lines


Square notch

Step 2: cut notch and receiver

Lock notch



Step 1. When the notch scribe goes beyond 1/2 the log diameter, place a level line (both sides) at the diameter, and with the same scribe setting, locate 4 points on the bottom log from the intersection of level lines and scribe line

Step 2. Join points across receiver min. 1/2 inch (15 mm) inside points. Cut top log notch flat to level line, then cut shoulder to the scribe line.

Doors and Windows

If the building is being taken down and moved to a permanent site, the doors and windows will be cut out at the permanent site. The headers are already cut so you make plum lines down for the sides and snap the bottom line across, and then cut them out using a chainsaw and guide. Lay out and cut spline grooves in the window and door sides and plane the window bottoms smooth. Be sure to allow for shrinkage and any framing going around the windows and doors.

Electrical, Plumbing, and Heating

This should all have been part of the building plan. either the holes for the wiring are drilled through the logs as they are being taken down to be moved, or the wiring can be laid in the lateral groves along the walls as the building is being built. The wires run below the floor or above the ceiling to the breaker box.

Standard plumbing system has the water and sewer lines going down from appliances through the floor and running underneath. The pipes will be contained within the cabinets and cupboards. The vent stack should have been incorporated in a convenient location where it cannot be seen.

If using a large masonry furnace, allow for shrinkage. Forced air furnaces are usually under the floor or in a separate room and duct work runs underneath with outlets in the floor. Wood stoves are not a problem to install.

Finishing/Staining

Exterior logs should have a good UV and mold and mildew resistant finish. Smooth out rough spots and remove any remaining bark and bits of protruding insulation. Treat with a good coat of exterior finish. Interior logs should also be cleaned up and any rough spots smoothed out. They can be washed with warm soapy water and rinsed. When dry, apply good interior log stain/finish.

Disassembly, Transport, Final Assembly

If you are moving the building to a permanent site, you can drill all the wiring holes as you take the logs down. Through rod holes can also be drilled in the same way. The building should have all the logs marked and record kept of order of assembly. The permanent foundation should ideally be about two feet above ground level to keep bottom logs dry. Insulation is laid between the logs as they go up and logs should be spiked together beside windows and doors. All walls may be spiked together or held together with threaded rod. Sill logs should be appropriately fastened to the foundation. Enseal strips can be put inside all notches to keep them airtight.

Benefits of Log Building as a Small Business

You work at home for all but the final raising of the building. Most of the cost of the log work is labor, which is a direct benefit to the builder. Overhead is low.

Spinoffs of Log Building

Log furniture building requires the same building methods, utilizes leftover, smaller log pieces, and can be quite profitable. It can also be an off-season or winter means of employment.

Reclaiming or repairing and refinishing old log buildings is in demand and is an extension of log building. Courses are available in this field.

Log Building Books

Building with Logs
Revised and Expanded Edition
by B. Allen Mackie
available at Lee Valley Tools

Log Span Tables
for Floor Joists, Beams, and Roof Systems
Available at Lee Valley Tools

The Craft of Modular Post and Beam
Building Log and Timber Homes Affordably
by Allen Mitchell
Available through local libraries

Notches of All Kinds
by B. Allen Mackie
Available from Diezen Log Tech., Parksville, BC
250.248.0294

Log Building Tools

Scribes, pencils, peavey, drawknife, barkspud, log dogs, chisels, planes, sharpening stones
Available from Lee Valley Tools

Ink lines, ink, flexible squares, chisels, scribers, slick, sharpening stones, oxe head axes
Available from Diezen Log Tech., Parksville, BC
250.248.0294.

Minimum Required Log Building Tools

Chalk line/ink line

Two foot and four foot level

Lumber marker, carpenter, regular and indelible pencils

Scriber, spray bottle

Flexible square or straight edge

30 foot and 100 foot tape measures

Crane or loader with forks and tongs or skyline rig

Log dogs holding, and rolling

Peavey, oxe head axe

Tongs, slings, straps

Medium size chainsaw with narrow bar and rip chain

Chisels, 1 inch to 2 inch

Drawknife, barkspud

Power or hand plane

Heavy electric drill, auger bits, 5/8 to 1 1/2 inches

Safety equipment: chaps, eye, ear protection

Files, sharpening stones

Gas and oil

Hammer, nails, screws

Boards, planks, plywood

Workshop V

The Business of Silviculture Contracting

Peter Higgelke and Ken VanEvery
KBM Forestry Consultants Inc.

Silviculture: The theory and practice of controlling the establishment, composition, growth and quality of forest stands to achieve the objectives of management.

Why Become a Contractor

- Make money (for yourself or your community)
- Build your own business, be your own boss
- Generate economic opportunities

Contracting Opportunities

There are three main areas of silvicultural contracting opportunities

- site preparation
- reforestation
- stand tending

Site Preparation

- scarification
  - prime mover (skidder, bull dozer), and
  - implement (trencher, patch scarifier, drags)
- pile and burn slash
- herbicide application
- characteristics
  - high cost, potential high return, need substantial training and resources, seasonal

Reforestation

- tree planting
- seeding
- cone picking
- characteristics
  - low startup cost, seasonal, labour intensive, minimal training required

Stand Tending

- cleaning (removal of undesired tree species)
  - usually done using herbicides or motor manual (brushsaw)
- spacing (removal of some crop trees)
  - usually done motor manual
- characteristics
  - moderate startup cost, usually seasonal, labour intensive, moderate level of training required

Starting Point

Barrels and Chains

What is Silviculture?

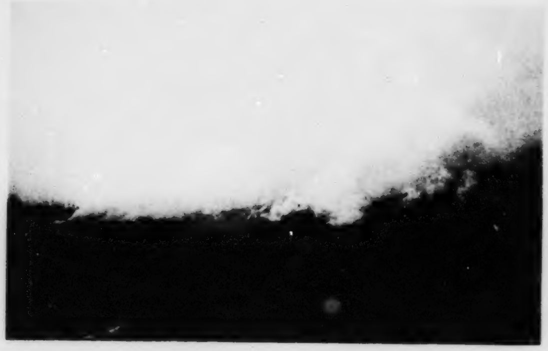
Bracke Patch Scarifier

Seedling Planted in Bracke Scalp

Slash Piling

Seedling Planted in Burnt Slash Pile

Slash Burning



Obtaining the Contract

- from whom?
  - many agencies participate in silviculture programs
- government
  - federal, provincial, local
- industry
  - forest licensees, third party agreements
- private land owners
- contractors (as sub-contractors)

Preparing the Bid

Opportunities

- government contracts
  - usually an open bidding process
  - often posted in the internet (www.merx.cebra.com, www.for.gov.bc.ca/tasb/cntmng)
- industry
  - often have a preferred contractor list
  - may be difficult to get in initially
  - talk to the right people and be persistent
    - be prepared to sell yourself (do your homework)

The Bid

- the exact structure of a bid is often dictated by the contracting agency
- bids usually contain the following broad categories:
  - experience
  - resources
  - cost

Experience

- this is where you demonstrate that you are capable of completing the project
- outline such things as:
  - past projects you have completed
  - experience of your staff
- if you have limited experience
  - form relationship with existing contractor(s)
  - outline your training program/strategy
  - joint venture

Resources

- this is where you demonstrate that you have the necessary infrastructure and human resources to successfully complete the contact
- list pertinent equipment you own
- skill/training of your employees

Cost/Budget

- types of costs
  - wages/benefits, administration, transportation, accommodations, food, equipment, maintenance, repairs
- operation factors affecting costs
  - terrain of worksite, ground conditions
  - access
  - mode of operation (seedling type, stand density)

Costing

- **experience is key**
- there is no single method to calculating a bid price
- break the project into smaller tasks
- once broken down estimate/calculate the cost for each of these tasks

Costing Example: Tree planting

- preliminary data
  - no. of trees, site specific factors, stock type, layout, other
- wages
  - supervisors, planters, other
- equipment and supplies
- camp costs
- transportation
  - personnel, equipment, seedlings
- other overhead
  - accounting, administration
- costing
  - field evaluations
- profit

Training

- level of training is task specific
- check the internet for courses
  - The Business of Silviculture Contracting www.lorax-training.com/bsc.htm
  - Tree Planting www.brinkmanforest.com/html/train.htm

Managing the Contract

Accounting and Finance

Accounting and finance are as important as the technical aspects of a business.

Return on investment and the record of profitability are the most overlooked aspects of running a business.

Methods to control and monitor all accounting, budgetary, and financial matters must be established.

Solid financial planning is required for a business to be successful.

Financial Return

For an owner, a business exists to earn a return on investment, consistent with the degree of risk involved. When addressing financial return matters, a business should consider the following:

- the profit ratio and the rate of return on investments should be compared with industry statistics;
- the return on investment should compare favourably to alternative investment possibilities;
- the rate of return and profit objectives should be set for the upcoming five years and plans for achieving these objectives should be formulated, and
- the return on capital should be used in evaluating capital expenditures.

Financial Planning

Aim to accumulate adequate funds at a lower cost and provide for future capital needs. The need for additional financial resources should be foreseen and their acquisition planned. Important aspects for a business to consider in terms of financial planning include the following:

- future financing should be planned so that capital funds are obtained at the lowest possible cost
- financial needs for the next three years should be estimated
- financial planning should strive for an optimum mixture between debt and equity capital that compares favourably with the industry average
- potential disadvantages of using external sources of finance should be considered
- capital should be used effectively.

Financial Accounting

The purpose of financial accounting is to record transactions involving revenues, expenses, assets, liabilities, and net worth. Financial accounting yields periodic summaries of financial position and income. In order for the process of financial accounting to be efficient, the following should be considered:

- account books should be balanced on a monthly basis
- journal entries should be adequately supported by substantiating data
- records should be audited by an independent auditor at least once a year
- profit and loss statements should be prepared at least twice a year
- the information in financial statements should be presented in such a way that management strategies can be implemented readily.

Cost Accounting

Purpose is to provide data concerning some object of management interest for managerial planning, control, and decision-making. If cost accounting is not carried out, it will be nearly impossible to determine what products should be pushed or what pricing strategies should be followed. The following points are important to consider in terms of cost accounting:

- direct costs and marginal income should be used for economic evaluation and planning (e.g., pricing and product selection)
- cost figures should provide a relatively accurate representation of the true costs incurred
- the cost system should distinguish between direct and fixed costs
- cost and revenue figures should be easily and regularly available
- standard costs should be considered to provide a basis for cost comparison and control.

Cost Management

The purpose of cash planning is to ensure that there is always cash to meet obligations, to take advantage of opportunities, and to ensure that surplus cash is put to profitable use. Proper cost management considers the following:

- cash forecasts indicating expected cash intake and outlay should be prepared for at least six months into the future
- arrangements for short-term financing of cash shortages and investment of cash surpluses should be made in advance of such developments
- collections should be analysed and sped up whenever possible and payments should be paced
- proper controls for the collection and disbursement of cash should be in place
- no single individual should have complete control over all the movements of cash in a firm.

Budgets

The purpose of a budget is to predict and control financial outcomes. This is achieved by predetermining what revenues and costs should be before they are actually incurred. Effective budgeting considers the following:

- revenue and expense budgets are prepared at least once a year
- realistic budget figures are established based on available data
- the responsibility of maintaining expenses within the budgeted amounts is assigned to specific individuals
- persons responsible for operating within budget limits participate in setting the budget
- frequent comparisons are made between actual and budgeted performance and variances are analysed.

Legal Matters

- Acts and Regulations Governing Silviculture Work
- The acts relevant to silviculture contracting include:
  - *Occupational Health and Safety Act*
  - *Workplace Hazardous Materials Information System (WHMIS)*
  - *Workers Compensation Act*
  - *Builders Lien Act*
  - *Labour Relations Act*
  - *Transportation of Dangerous Goods Act*
  - *The Forest Act*
  - *Fires Prevention Act*
  - Other applicable legislation (e.g. Pay Equity, Income Tax, Unemployment Insurance, Canada Pensions Act, Human Rights legislation, etc.)

Important Points to Consider Concerning Contracts

- Thoroughly read and understand all contracts.
- Do not take someone's work or past practice as an indication that it is right. Always check with the source person, document, or authority when in doubt.
- A working relationship is as important as the legal contract. Maintain close liaison with a client.
- Regular, written communications can be invaluable on contracts to avoid misunderstandings.
- Contracts between clients can differ. The Crown will have different terms and conditions compared to a private forest company.

Contract Obligations

Contract obligations include the following:

- record keeping;
- insurance;
- work permits;
- holdbacks;
- forest fire fighting;
- quality control and inspection; and
- contract schedules.

Taxation

Advantages Applicable to Small and Medium-Sized Businesses

- deductible expenses
- use of a vehicle
- federal tax allowance
- deduction for inventory
- deduction granted to small and medium-sized businesses
- deduction for depreciation
- tax credit on forestry operations

Common components of a Contract

- Names of the parties
- Term
- Definitions
- Equipment
- Instructions
- Financials
- Proof of Insurance
- Proof of Workers Compensation
- Termination
- Assessment
- Safety
- Environmental
- Other
- Schedules - payment; representatives; quality parameters; forest fire equipment

Contract follow-up

After the contract has been completed ask the client for a written evaluation of your work:

- helps identify problems and solutions
- use it to improve your performance in future years and as a reference for work from other clients in the future
- complete a personnel performance evaluation for each of your employees
- include quality and productivity assessments
- indicate whether or not rehiring is recommended

Case Study
SITE PREPARATION
A Partnership Example

Three Parties

1. Forestry Company
2. First Nation
3. KBM Forestry Consultants Inc.

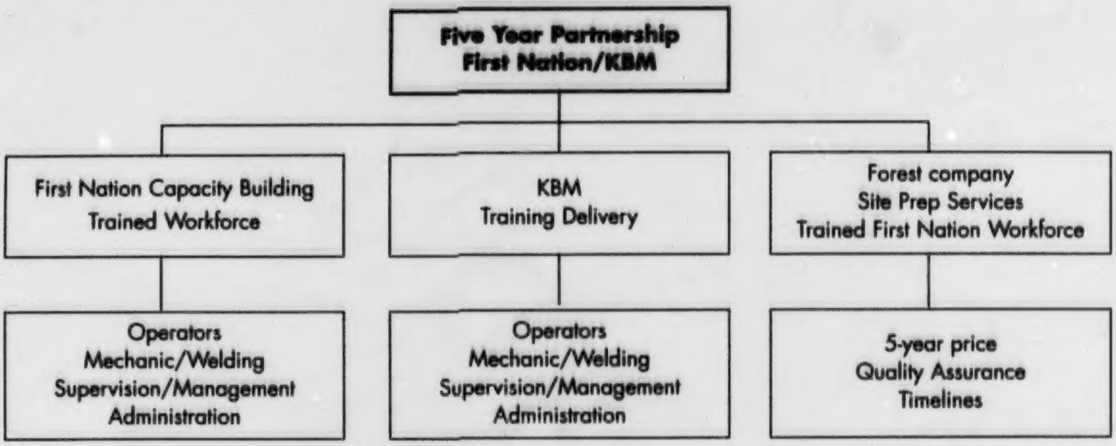
The Problem

- KBM no way to compete with local contractors
- First Nation local but possessed no capacity to complete the work

The Solution

- KBM and First Nation joined forces
- First Nation provided labour pool
- reduced cost and became competitive
- KBM provided experience
- together had capacity to complete the work at competitive rate

First Nation owned and operated site prep machine



Benefits to the Parties

Forest Company

- quality site prep services
- set price for five years
- trained local workforce
- increased competition
- relationship with First Nation
    - First Nation employment
    - First Nation business development

First Nation

- trained workforce
- equipment acquisition
- employment
- business development
- relationship with forest company
- profit sharing

KBM

- business development in area where contracting historically difficult
- development of role as intermediary between First Nations and forest industry
- equipment acquisition
- employment
- relationship with forest company
- profit sharing

Key Points

Forest Company

- contract to known contractor (KBM)
- quality assurances
- deal with folks who know the business

First Nation

- training, employment
- equipment acquisition
- development of business acumen
- become credible contractor
- separation of business from politics
- auditable financials

KBM

- control
- operations
- financial

Inputs

First Nation

- training program costs
- trainees
  - operators
  - mechanic/welder
  - supervisor/manager
  - administrator
- project co-manager

KBM

- training
- supervision/management
- quality assurances
- knowledge

Forest Company

- Five-year contract
- Consistent contract size

Obtaining a Contract

- check opportunities
  - forest companies
  - government agencies
  - contractors
- are any of interest?
- do you have the capacity?
  - human resources
  - equipment
  - financial

How can you eliminate capacity deficiencies?

- human resources
  - training programs
  - on-the-job training
  - funding
- equipment
  - purchase or lease
  - new or used
- financial
  - banks
  - Band loans

Eliminating deficiencies or gaps

- human resources and equipment
- size of gap depends on
  - scope of opportunity
  - present state of resources

Assessing Gaps: Human Resources

		Scope of Opportunity	
		Small	Large
Need for Training	Low	$	$$$
	High	$$$	$$$$$

Assessing Gaps: Equipment

Equipment needed to perform the contract

minus

equipment resources on hand

equals

outstanding equipment requirements

First Nation was able to acquire training and equipment through partnership with contractor

Assessing Gaps: Financial

- dollars for training
- dollars for equipment
- minus dollars available
- if still large, then what?

First Nation Taxation

- if revenue comes from off-reserve source it is taxable
- includes First Nation individuals or corporations
    - First Nation individual earning income that is derived from off-reserve source must pay income tax on those funds
    - First Nation corporation earning revenue from off-reserve source is subject to corporate taxation
- to be non-taxable, source of revenue cannot be off-reserve

First Nation Business Trust

- First Nation Business Trusts often used as mechanism to carry on business without paying tax.
    - head office on reserve
    - majority of trustees reside on reserve
- money goes to Business Trust
- from Business Trust money can be distributed without being taxed

Business Trust

- Business Trust becomes on-reserve source
- last method available to carry on business without paying tax
- complex
- Jim Johnson or Brian MacIvor at Cheadle Johnson Shanks MacIvor at 807-622-6821

Workshop VI

Conducting Traditional Land Use and Occupancy Studies

Peter T. Snow, BES, MEDes
Snow and Associates Inc.

Importance: Why Conduct Traditional Land Use and Occupancy Studies (TLUOS)?

- increased aboriginal involvement in industrial development on or near Aboriginal lands
- increased court decisions in favour of Aboriginal traditional land uses
- increased need to plan with Aboriginal people
- developing long-term relationships

What is a Traditional Land Use and Occupancy Study?

"Traditional land use and occupancy is a term that social scientists use to describe how Aboriginal people rely on the land for hunting, fishing, gathering edible plants, trapping and generally living and travelling in the bush."

It is essentially a way of incorporating traditional and scientific knowledge to better plan for future development on or near ancestral lands used by Aboriginal people.

TLUOS Purpose

- identify overall program and study area
- identify species, sites, spiritual icons
  - birds, fish, ungulates, fur bearers, bugs, camps, cabins, vision quest sites, historic sites, trails, and graves
- research existing knowledge of use and develop interview protocol
- develop maps and integrate traditional history
- maintain, educate, and promote shared decision making

Developing a TLUOS

- basic mapping (place names, trails, graves, cabin sites, known harvest locations, and registered trap lines)
- overlays (display data sets on transparent overlay maps)
- regional use patterns
- co-management relationships

Working with Aboriginal People

- community involvement
  - band co-operation
  - community advisory committee
  - government, industry involvement
- intellectual property rights
  - maintaining confidentiality
- shared decision making
  - co-management

Developing Taxonomy

"The scientific process of classifying living things"

- determine what are living things
- what is their significance
- how are these incorporated into the TLUOS
- learning about Traditional Environmental Knowledge (TEK) versus scientific knowledge

Designing Interviews for Mapping

- understanding Aboriginal people
- developing interview protocol
- participatory action research
- collection, documentation, storage of material

Co-Management Theory, Application and Process

- what is co-management?
- how can co-management be applied?
- what is the process of co-management?

Conclusion

"When traditional environmental knowledge is combined with modern scientific knowledge, better decisions about the future can be taken. The combination of the two types of knowledge – traditional and scientific – to make decisions about conservation, land-use planning and industrial development is called co-management".

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Conference Wrap-up

Conference Wrap-up

Steve Price, Natural Resources Canada, Canadian Forest Service

It's a pleasure to provide you with wrap-up comments on what has been a stimulating and most enjoyable conference. What I'm going to do is provide you with what I thought were the hi-lights of the conference - nuggets to take home and think about.

The conference started with an opening prayer and welcome from Elder Frank Wesley and Grand Chief Rod Bushie. We then heard from Harry Bombay representing the National Management Committee, FNFP. Harry brought greetings and provided an update on the activities of the committee.

Yvan Hardy then provided you with information concerning the CFS involvement in the program. I then provided an overview of program structure, activities and opportunities.

Our Keynote speaker was Dr. Gail Sloan who talked about empowerment through training with specific examples drawn from her work at Haskell Indian Nations University. Gail talked about support needs … cultural … academic, and financial. She talked about mentoring … "reaching back and looking forward". She talked about success and achieving "personal best".

Day 2 started with Les Cooke from Saskatchewan talking about dealing with the "psychology of Saskatchewan". Les gave you an overview of the Saskatchewan forest sector and the expansion that's taking place. He talked about an integrated approach … one-stop shopping! He talked about three pronged strategies and two phases of development and the importance of aboriginal involvement. Les talked about "trust, respect and knowing what you want!"

Bob Yatkowsky then talked to us about Pine Falls Paper and Tembec giving us an overview of the company, its history, its future direction. Bob referred to "a company of people building their own future"… of the importance of recognizing traditional land uses … about social and economic needs … of the importance of sharing information … and he talked about opportunities for First Nations.

We then heard from Mike Walton and David Cole from Al-Pac. Mike talked about the need for corporate Canada to have an obligation to society that goes beyond profit. He talked about the need to make people feel comfortable in the organization and he too talked about "trust and tolerance". He talked about training versus upgrading and reinforced Gail Sloan's message about the need for basic literacy, arithmetic, and life skills. He also talked about barriers to partnership that can cause paralysis.

Davis Cole provided us with an overview of Christina River Enterprises and Kikino Metis Settlement and their focus on maintenance of the forest and sacrificing profits for land stewardship. David then talked about training that includes traditional values.

Chris Nicols and Dan Kohoko told us about a joint initiative for policy development between INAC and AFN. They talked about a process driven by First Nations and a conference to be held in Winnipeg in June.

You then split into two groups for workshops. Under the guidance of moderator Gordon McColm we heard from Gary Ardron who talked about the development of management plans. Gary stressed the importance of knowing what you want...community involvement...community buy-in...knowing your resource base and the dynamic nature of plans. Derek Acres then provided us with an introduction to geographic information systems - a GIS 101! James Matthews then provided us with an introduction to GPS. He talked about NAVSTAR, satellite constellations, the ionosphere, SVs, SAs, DGPs, satellite DPGs, post processed differential GPs etc. … I now know that with my Casio watch, a palmcorder, cell phone and laptop I can know where I've been, where I am and where I want to go … but only within 100 metres!!!

Jeff Courchene talked about his experiences with the Manitoba Model Forest and the First Nations Forestry Program. He talked about jobs and benefits and the importance of addressing needs of the grassroots level. He talked about "eligibility criteria" and how they can be a barrier to getting things done!

Alfred Jolly and Phillip Grant provide us with an overview of the Waswanipi Cree Model Forest. They talked about being in harmony with the Cree way of life … .the goals of the Model Forest … and … striking a balance between forestry operations and hunting and fishing.

John Dyck providing an overview of activities on the Sagkeeng First Nation. He stressed the importance of identifying goals and objectives and of getting community buy-in!

Jake Dyck talked about the success of forestry programs on reserve lands near The Pas and Gerry Becker, Russell Bell and Robert Frank ended the day with an excellent overview of Manitoba forest inventory systems.

Over in the loading dock area, Scott Davis and Kevin Teneyke were waxing eloquent on the subject of chainsaw maintenance, safety, and proper handling. Burton Boryon then demonstrated the set-up and use of a portable sawmill. Burton talked about tools and the skills needed to operate a portable mill. He emphasized the need for proper maintenance pointing out that your $20,000 sawmill is only as good as the $40 blade.

Day 3 started with a presentation from Harry Bombay who focused on the needs for Aboriginal development. Harry talked about the projected demand for First Nations foresters to properly manage the FN resource base.

Meanwhile, in the loading dock, Mike Watt was busy building a log house. Mike emphasized the need to have a good plan – seems like a common message whether building a house or managing your forest!

Back in the ballroom, Barb Janke was waltzing us through the fundamentals, concepts, and intricacies of log scaling. Barb was followed by Lyle Redlick who provided an introduction to lumber grading starting with a basic introduction to tree morphology and physiology. Lyle talked about the relationship between cell structure and lumber drying and the relationship between lumber grade and value of product to milling techniques.

Peter Snow then addressed the subject of traditional land use and occupancy studies emphasizing the need to understand the Aboriginal perspective and the importance of community support and community commitment.

Peter Higgelke and Ken Van Every talked about contracting and small business management. They stressed the need for trained personnel and good equipment. They also suggested that accounting and financial management are every bit as important as technical forestry skills. One of their key messages – learn from your failures.

It has been a busy three days. I've learned a lot and I sincerely hope that you picked up on some of the ideas presented by an excellent suite of speakers. At this time, I'd like to extend thanks to the many people that made this conference possible including: the hotel staff; the exhibitors; the lunch and dinner sponsors - Manitoba Conservation, Pine Falls Paper Co. and the Canadian Model Forest Network; our speakers; the FNFP National Management Committee - Harry Bombay, Dan

Murphy, Dan Welsh and Jack Smyth; the FNFP Management Committees in Manitoba, Saskatchewan, Alberta, and the NWT; the conference coordinators - Carol Mardell, Kathy Earl, Christine Barker, Michael Newman, Lorne West and Joe De Franceschi; and most of all a special thanks to all of you. Without you, this conference would not have been possible! I hope to see you again next year!

And one last thank you to Elder Frank Wesley who will bring this conference to a close with prayer.

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